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AN EVALUATION OF COMPONENT  
DEPENDENCE IN COST-RISK ANALYSIS  
THESIS

Robert E. Devaney      Philip T. Popovic  
First Lieutenant, USAF      Captain, USAF

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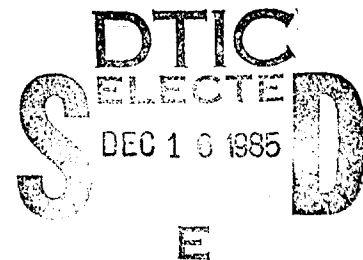
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AN EVALUATION OF COMPONENT  
DEPENDENCE IN COST-RISK ASSESSMENT

THESIS

Presented to the Faculty of the School of Systems and Logistics  
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science in Systems Management

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September 1985

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## Preface

The purpose of this research effort was to develop a cost-risk assessment method that incorporated the effects of cost dependence among system components. Current cost-risk assessment techniques make limiting assumptions of component cost independence or total component cost dependence, neither of which we felt truly represented system relationships.

The method we developed and tested provides insight into the modelling of component cost dependency and its application to cost-risk assessment. Further research in this area will improve the ability of the Department of Defense to estimate cost-risk and to limit weapon system cost growth.

During the course of this research effort we have had a great deal of help from a number of people. We are grateful for the direction given to us by our thesis advisor, Mr Rich Murphy. His ideas guided us through the entire project. We wish to thank Col Deep of the Business Management Research Center and his staff for their assistance and cooperation. Finally, we wish to thank Cathy Devaney and Sandy Rue for their patience and support throughout the past months.

Philip T. Popovich

Robert E. Devaney

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Abstract

This research project developed a cost-risk assessment method that incorporated the effects of cost dependency between components in a system. The method uses program personnel's subjective assessments of component dependency as inputs. A simulation model was developed and employed to test the method under various levels of component dependence strength and direction, estimation error, and system size.

The analysis was accomplished by performing sensitivity analysis on the predictive capabilities of the cost-risk assessing method. Results indicate that the method has strong predictive capability when component size is small and when the direction of the component dependencies is mixed. It was also determined that the use of component dependency assessments produced more realistic total system variances than those produced under the assumption of component cost independence.

# AN EVALUATION OF COMPONENT DEPENDENCE IN COST-RISK ASSESSMENT

## I. Introduction

### General Issue

The basic economic problem in the world is scarcity. Scarcity in critical human skills, raw materials, products and services characterizes an environment of limited resources. Like all other nations, the United States must operate within its resource constraints. Resource scarcity pervades and influences decisions at all levels of our government and industry.

A Macro View. Productive resources are distributed between the competing demands of the public and private sectors of the United States economy. Furthermore, the sum total of resources available for public and private use is generally considered to be fixed in the short run. Consequently, the Government's share of our nation's scarce resources can only be increased at the expense of private consumption and/or investment. Even when there are unemployed resources available, the utilization of these resources in the public sector may still have a negative impact on the private sector if they are paid for with tax dollars.

Within the public sector, the government must allocate human and material resources to fulfill both national de-

fense and social responsibilities. Increasing our defense capability by producing the B-1B Bomber or the Peacekeeper missile requires either a cutback in the resources allocated to social programs, or a shifting of resources from the private to the public sector. In addition, political decisions in a democratic society cannot deviate substantially from the public will without a loss of public trust. Consequently, the dual constraints of public will and scarcity limits both the quantity of resources allocated to the public sector and their distribution among competing public needs.

Since money is used by free market societies as a medium for valuing resources, the government's allocation of its human and material assets is accomplished through the budget process. The government indicates, through its appropriation of public funds, how it wants resources divided between defense and social programs. The government's responsibility to see that these funds are wisely spent is ingrained in the words of Thomas Paine:

Public money ought to be touched with the most scrupulous consciousness... It is not the produce of riches only but of the hard earnings of labor and poverty. It is drawn even from the bitterness of want and misery. Not a beggar passes, or perishes in the streets, whose mite is not in that mass [22:1].

As a steward of public funds, the DoD shares the same ethical responsibility common to all government agencies in expending those funds.

Another reason the military establishment must use its

resources effectively and efficiently is to gain and maintain credibility. Since Congress determines what portion of the federal budget is to be appropriated for national defense, Congress must feel confident that DoD's funds are wisely used. The level of DoD appropriations is also indirectly influenced through the attitudes of Congressional constituents. When the public supports defense programs, it is easy for 'pro-defense' legislators to vote their conscience. Even those who traditionally favor social programs will be more compelled to support defense activities in order to maintain favor with their constituencies. For these reasons, the military must maintain a strong public image, based on the efficient use of resources to meet essential goals. To do otherwise would undermine its ability to secure the resources necessary to provide for a strong national defense.

The Micro View. Resource scarcity influences decisions at all levels of government; the Department of Defense is no exception. Resource limitations create controversy concerning the correct combination of programs to maximize our military capability. What is the optimal blend of strategic and tactical forces? Must the purchase of new weapon systems be sacrificed to retain manpower at desired levels? These are but a few examples of trade-off decisions that DoD managers continually make while pursuing our defense goals. Annual Program Objective Memorandum (POM) decisions reflect the internal competition within the DoD for scarce resources.

Resource scarcity critically impacts the way DoD develops and procures its weapon systems. With an emerging emphasis on readiness and maintainability issues, a larger share of future funding will likely be diverted from those who acquire systems to those who operate and maintain them. Even within the acquisition community, there are competing resource demands. Trade-offs are frequently made between the amount of development effort and the number of systems we produce. Lack of adequate funding can often limit development effort, in areas such as test and evaluation, in order to maintain desired production quantities. Another example of resource trade-offs is the 'stretching out' of efficient production schedules to redirect funds to competing programs. These examples clearly indicate that the distribution of scarce resources, a problem at all levels of our economy, forces major trade-offs in the acquisition of weapon systems.

DoD resource trade-offs are couched in an environment of imperfect information. A by-product of this uncertainty is cost growth in weapons acquisition. Cost growth is the increase from the initial program cost estimate to the final program cost (3:105). Clearly, not all cost growth can be viewed in a negative context. Cost-effective specification changes, for example, often enhance weapon system performance beyond the initial design. Likewise, boosting production quantities is also an intentional management decision to increase both cost and defense capability. It would be

naive, however, to imply that all cost growth is controlled or favorable. Most weapon system programs, regardless of their degree of complexity, face a certain amount of risk... unforeseen and possibly unfavorable.

The concept of risk has often been used to denote the probability of an event (4:II-2). In the acquisition environment, cost-risk is the probability of achieving some defined program event, in this case, a cost outcome. If the cost exceeds the anticipated outcome a cost overrun results. Conversely, a cost underrun is any program cost which is less than the anticipated outcome.

The consequences of cost overruns are well recognized. The affected program may either be cancelled, delayed or funded. Cancellation results in unanswered defense needs, while delays result in inefficient program execution - often at a higher final cost. Funding a financially-troubled program in order to avoid these consequences may come at the expense of other related defense programs.

Beverly, and others, state that cost-risk has commonly been attributed to three areas: technical risk, schedule risk and estimating risk. Technical risks arise from striving to achieve maximum performance and technological superiority. The 'state-of-the-art' is often advanced beyond its current boundaries. Schedule risk hinges on the ability of the contractor to meet contractual delivery terms with a product of acceptable quality. Estimating risk commonly results from vague early system definition, lack of

sufficient historical data, or inherent fluctuations in the prices of labor and materials. While all three risk areas impact cost, their effect may be somewhat complimentary (2:265). For example, schedule delays may stem from technical failures. They may also result when a program cannot continue due to a lack of funds caused by an inadequate cost estimate. Because of their direct and complimentary effects on cost, this research uses cost-risk in the context of an aggregate measure of technical, schedule and estimating risk. A program cost goal will be viewed as that program cost which balances an accepted level of technical, schedule and estimating risks.

Definitions. The application of risk assessment to defense weapon system acquisition is relatively new; therefore, widespread agreement on common terms and definitions has not yet emerged (14:35-39). One conclusion from a 1981 risk symposium was the need for basic definitions and common classifications (15:175.2). The solidification of terminology should result as the risk assessment discipline matures.

Rowe and Somers categorize risk analysis as diagrammed in Fig. 1.1. They view risk assessment as the estimation of the risks associated with given program alternatives, while risk management is the action taken to reduce these risks. Risk analysis is considered the combination of risk assessment and risk management (13:10).

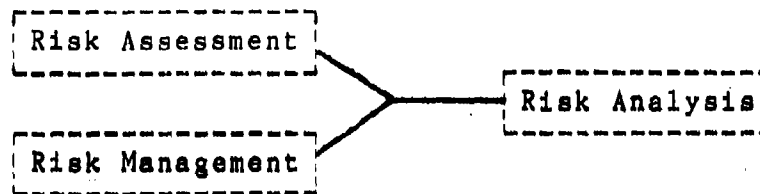


Fig. 1.1 Risk Analysis Taxonomy Adapted from (4:I-3)

This paper accepts that taxonomy, and will focus solely on risk assessment. For further clarification, this paper uses a modified Defense Systems Management College (DSMC) definition of cost-risk assessment, "the mathematical probability of achieving or not achieving acquisition cost... goals" (4:B-5). Identifying the magnitude of the deviation from the cost goal, along with the deviation's probability of occurrence, is an implicit part of the risk assessment process. Implied in this definition is Worm's concept of reasonably efficient and economical practices in the contractor's and government's operation (20:1).

#### Specific Problem Statement

While program cost estimates are traditionally presented as a single, unique value, the probability of achieving that cost has generally been ignored. Not until recently has there been an emphasis on quantifying cost-risk, yet risk assessment has potential benefits when the magnitude of unfavorable consequences is significant.

Effective cost-risk assessment identifies and helps management focus attention on potential cost problems. The DoD manager may then make better resource allocation decisions in the face of uncertainty by applying risk management to appropriate program areas. Also, budget decisions made with cost-risk as an additional consideration should reflect more accurate program cost goals. Objective identification of adequate contingency funding will also result. Request for these contingencies during the budget process, a concept that the Army is using (8:2), may further DoD long-run credibility by reducing the occurrence of cost overruns.

In order to make better decisions, acquisition personnel need to know the probability of deviating from the program's cost goal or the probability of an outcome falling within a specified range of values. The following information is needed to determine this probability.

1. The shape of the total cost distribution is the underlying statistical distribution for the cost of an entire system. This distribution describes the relative likelihood of each possible cost outcome for the system.

2. The measure of location describes where the mean, median or mode are located on the cost distribution. The mode, or most likely cost outcome is typically the point cost estimate for the program (16:130).

3. The measure of scale indicates the amount of variance in the distribution. A large variance indicates a large dispersion around the mean and, therefore, a greater

potential program cost-risk. A good variance estimate is crucial in cost-risk assessment. While items 1 and 2 are necessary information for cost-risk assessments, they do not impact the thrust of this research.

While this information is sufficient for identifying cost-risk, it is seldom available for the entire system. Current cost-risk techniques divide the system into components, or identifiable activities, which collectively include all required program tasks. System components are typically Work Breakdown Structure (WBS) elements; however, Contract Line Items or other categorizations may be used (16:129). The cost of each system component is estimated separately. Because the shape of the cost distribution for each system component is rarely, if ever, known, analysts make distributional assumptions. The Normal, Beta and Triangular distributions are commonly used (18:195). The variance of each component is determined by estimating the most optimistic, most pessimistic and most-likely cost outcomes. The component variances are then added together to yield a total system cost variance. This allows cost-risk assessments to be made around the total system cost estimate. This process will be discussed more in Chapter 2.

It is the authors' opinion that the methods currently used to assess total system cost-risk are inadequate. Although cost-risk assessment is inherently subjective, cost-risk is also mis-estimated because of invalid assumptions about the relationships between system components. Most

often, components are assumed to be completely independent of each other; that is, cost performance in each system component is not associated with the cost outcomes of other system components. In other words, an increase in the cost of one of the system components does not imply an increase or decrease in the cost of any other system component. Assuming component independence, the cost variance for the total system is simply the sum of the component variances. This simplifying assumption is unrealistic because it understates the system cost variance whenever its component costs have a positive relationship to each other.

The counter-assumption to independence is the assumption that there is maximum positive linear dependency among all system components. With this assumption, the cost variance for the total system can also be expressed entirely in terms of individual component variances. Under this assumption, an increase in the cost of a system component would cause a totally predictable increase in all of the other system components. However, this approach overstates the system cost variance by assuming that the strength of a component's cost influence on all other components is so overwhelming as to be totally predictable. The overstatement of risk occurs because cost changes are assumed to affect components that, in reality would not be affected, could be negatively affected, or have only a weak positive affect. For this reason, assuming maximum positive linear dependency is unrealistic. This will be addressed further

in Chapter 3.

Intuitively, cost-risk dependence among some system component costs exists, but the strength of the relationships will vary between component pairings and should seldom be strong enough to correspond to maximum dependency. Statistical theory exists for identifying total system variance under these conditions. The details will be discussed in Chapter 3. For now, suffice it to say that the total variance is a function of the individual variances and a covariance term for each component pair. Wherever dependency exists between component pairs, the covariance indicates the direction of dependence: positive or negative. A positive covariance between two components indicates that a rise in the cost of one component will be reflected by a rise in the cost of the second component. Similarly, a decrease in the cost of one component will be reflected by a decrease in the cost of the second component. On the other hand, a negative covariance indicates that component costs will tend to move in opposite directions. The strength of the relationship can be determined after a simple scaling procedure.

Current risk assessment techniques do not require an estimate of the covariance among system components. As such, the information that is currently used is insufficient to accurately measure total system cost variance for a program with dependent components. The resulting system cost-risk is inherently distorted.

### Research Objective

The purpose of this research is to develop a methodology which produces a more realistic evaluation of cost-risk. Specifically, the goal is to estimate the total system cost variance given the existence of component dependencies.

Current statistical theory provides a solution to the problem. However, the solution requires reasonable estimates of the covariances between component pairs. Historical databases generally provide an inadequate basis for estimating these values, which means that program management personnel or knowledgeable system experts must be called upon to provide subjective measures of dependency. The problem is that these experts seldom, if ever, think about dependencies in terms of covariances. It would be a gross understatement to say that most experts would feel uncomfortable using covariance to describe dependence within a program. The key to solving this problem is to solicit information in terms that relate to the experts frame of reference. Failure to do so may result in receiving no information or information which provides a distorted picture of the expert's true opinion.

The methodology developed in this research must be able to convert this information into covariance estimates that capture the component dependencies implied in the expert's responses. Obviously, the adequacy of the conversion process is critical if the total system cost variance is to adequately reflect the 'real' cost-risk.

Development of this methodology, therefore, requires that the following specific research objectives be met:

1. Develop a methodology to translate subjective inputs into a measure of component dependency with a logical and rational basis.
2. Convert the component dependency measurement and other related cost data into a range-stated estimate.
3. Validate the predictive abilities of this technique.

The methodology to meet these objectives will be detailed in Chapter 3.

## II. Literature Review

### Purpose

Methodologies for quantifying program cost-risk within DoD are still evolving. Although these methodologies differ somewhat from each other, they follow a common risk assessment approach. The purpose of this chapter is to describe this general risk assessment process through a review of the current literature.

### Scope and Limitations

This chapter provides an overview of cost-risk assessment. It does not intend to provide a how-to procedure nor an in-depth explanation of any one risk assessment technique. Instead, it summarizes only the general concept behind risk assessment, with special interest on the more limited problem of determining the total system cost variance. As mentioned in Chapter 1, determining the shape and measure of location of the total cost distribution are beyond the scope of this research. This paper does assume that all component cost estimates (including the low and high estimates, which will be discussed later) are available.

Professional journals were included in the literature search, but they are oriented toward risk assessment in commerce and personal investment. Their contribution to this specific risk assessment problem was not significant.

For this reason, concepts in this chapter are primarily documented in government studies, articles from symposium proceedings, and official literature from the cost analysis and program management communities of the three military services.

### Organization

Following a brief background of risk analysis, this chapter will review the general risk assessment approach. It discusses the techniques used to determine distributional shape, measure of location, and variance for the components and how these are transformed into the equivalent information for the total system. It concludes with a portrayal of this total system information in a cost-probability relationship.

### Background

The history of DoD risk assessment is quite recent. The post-Korean conflict era found the military services with ample funding for weapon system development and acquisition. Cost growth was generally tolerated and easily absorbed by the national budget. Events changed in the 1960's and 1970's as the Federal budget expanded in social entitlements. As competition for scarce Federal resources intensified, military cost growth quickly became more politically sensitive. This scrutiny of DoD management fathered the need to apply risk concepts in order to identify and control acquisition costs.

In the wake of this period of cost growth sensitivity, the 1981 Defense Acquisition Improvement Program highlighted DoD's cost-risk awareness. Mr Carlucci's Initiative #11 'recommended' an increased effort to quantify risk within the DoD, and directed the military services to adopt a method to budget funds for risk and uncertainty (10:55).

Early work with DoD risk assessment was done primarily by the RAND Corporation. Eventually, the problem received increased, cooperative attention from industry, government and academe. The first symposium to include the management of risk in the defense acquisition process was hosted by the University of Southern California (U.S.C.) in 1979. A second workshop, held at the Air Force Academy in 1981, was co-sponsored by U.S.C. and the Air Force Business Research Management Center. The most recent workshop met at the DSMC in 1983 (13:6). The workshop has now evolved into a biannual Defense activity.

Despite this increased emphasis on risk applications, most current DoD acquisition policies do not require formal, quantitative risk assessments. One exception is the Army's Total Risk Assessing Cost Estimate (TRACE) program which requires risk assessments for selected programs and incorporates the results into the budget process (10:61).

#### The Risk Assessment Process

Cost-risk assessment techniques follow the general approach illustrated in Fig. 2.1. This process has three

basic steps (21:3-4).

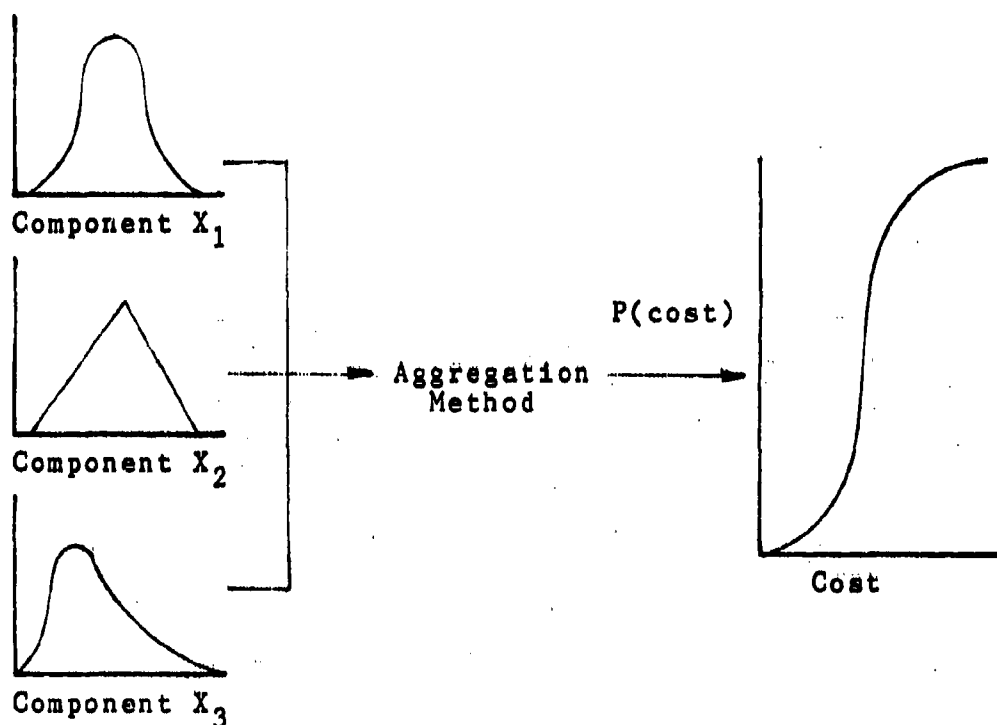


Fig. 2.1. Risk Assessment Process Adapted from (18:194)

First, the weapon system is broken into its components at some specified level of detail. The breakdown of each system should go as low as necessary to include those components which are considered to have particularly high risk (11:250). The cost uncertainty for each component is then represented by a distribution of the possible costs for the component. Second, the component distributions are transformed into a cost distribution for the total system using some aggregation method in order to reflect the amount of uncertainty in the total system cost. Third, this total

distribution is expressed in probabalistic terms to aid program management decisions. The following sections describe these steps in more detail.

Step One. Component costs are point estimates that are derived from cost estimating techniques such as: parametric (cost estimating relationships), detailed (bottoms-up), analogy, and constant multiplier (factor) (D:136). These techniques require information about component physical and performance characteristics, manhour and material requirements, or a subjective estimate about the similarities of the component to other components for which the costs are known.

The potential cost variability around these point estimates is often represented by a probability density function (p.d.f.). The shape of the p.d.f. often has the following characteristics:

1. fixed, positive upper and lower bounds
2. not necessarily symmetric
3. unimodal
4. computationally simple (18:195)

Flexibility is also desirable, such that changing the values of the distribution's parameters allows it to assume many variations of its general shape. This characteristic offers adaptability in representing a variety of cost patterns (21:5). Most analysts use the Beta distribution. Others prefer the Gamma, Normal or Weibul distributions because these are un-bounded in at least one direction, and there-

fore, leave open the possibility of unusually high and/or low cost outcomes (18:195). The unbound portion(s) of the curve run asymptotic to the x-axis; therefore, the probability of extremely high and/or low values approaches zero (21:5). The triangular distribution may also be appropriate (18:195). The selection of a distribution shape is largely a matter of analyst preference and insight into the possible cost outcomes. Two or more distribution shapes may be reasonable choices in many situations.

Once a distribution has been selected, the program management team often needs to estimate only three values to determine the distribution's variance: low cost, most-likely cost and high cost. The low estimate should be that cost which results from the most optimistic conditions. The probability of achieving a cost below this value is zero for a bounded distribution. The most-likely estimate is the most-probable cost, or the mode of the distribution. The high estimate should be that pessimistic cost which reflects the worst conditions. The probability of exceeding this high value is also zero for a bounded distribution (17:A-50).

Given these three values, a formula may then be used to calculate the variance. For example, the approximate variance of a Beta distribution is calculated by squaring one-sixth of the difference between the high and low estimates (9:138; 12:30).

Naturally, the low, most-likely, and high estimates are

subjective. Kazanowski feels that the most-likely value is generally the most difficult to estimate because of estimator indifference to a broad mid-range of values (9:138). For certain distributions this is true. Fig. 2.2(a) represents such a case where the estimator may be reasonably certain about the upper and lower bounds, but a large degree of indifference exists for the most-likely value.

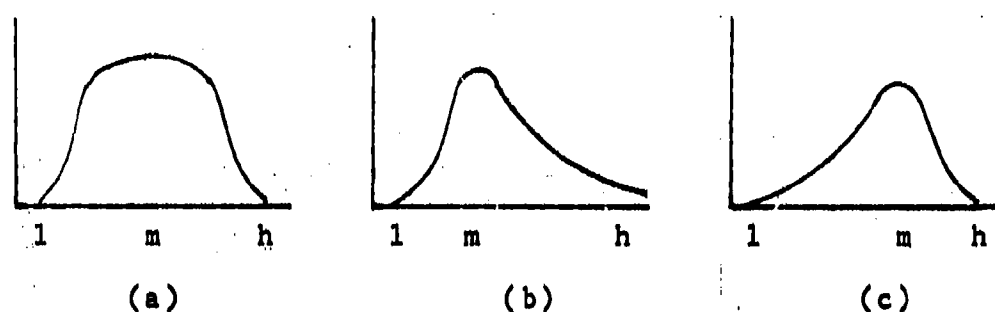


Fig. 2.2. Cost Distribution Examples

However, the distributional shapes shown in Figs 2.2(b) and 2.2(c) are so greatly skewed in one direction that the high or low cost may be the most difficult to estimate.

Analysts may feel uncomfortable in estimating absolute low or high costs, particularly if they perceive extreme skewness and have selected an unbounded distributional shape. In those cases, the low and high estimates need not be absolutes. Instead, the analyst may select a reasonably low cost and estimate the associated probability of under-running it. He also selects a reasonably high cost and estimates the probability of overrunning it. For example,

McNichols provides a revised formula for calculating the approximate variance for a Beta distribution when the 5 and 95 percentile costs are given. The formula is the difference between the high ( $x_{.95}$ ) and low ( $x_{.05}$ ) estimates divided by 3.2, quantity squared (12:36). Similarly, with a triangular distribution, Wilder and Black provide a means of calculating the absolute high and low costs using any percentile (17:A-50). Once the absolute high and low costs have been calculated, they may be used in a formula to find the variance for the distribution.

Step Two. The next step in the process is to transform the cost estimate, distribution shape and the variance for each component into an overall cost distribution for the total weapon system (21:4). A common technique for determining the shape of the distribution is the method of moments, which was first applied by McNichols in 1976 (18:195A). The technique is generally used in conjunction with parametric cost estimating methods. As a result, it generally relies on a large historical database to determine the probability distributions for the components and the total system (12:20).

The method-of-moments characterizes each component cost distribution by four additive moments. The first additive moment is the mean of the distribution, that is, the first moment about the origin. The second and third additive moments are central moments (moments taken about the mean). The second moment is the variance, which measures squared

deviations about the mean, while the third moment is used to measure asymmetry. The fourth additive moment measures peakedness, and is formulated using the second and fourth central moments (16:130). The four additive moments are expressed analytically so that the formulas have additive properties. For example, the second moment (variance) for the total system is the summation of all the component second moments. Therefore, the shape of the total cost distribution for a system with independent components is found by summing the similar moments of every component. The analyst may then 'fit' a selected distribution to the four moments with the aid of computerized routines (16:130).

The measure of location, or the point estimate, for the total system cost has not been calculated in a wholly consistent manner. The method-of-moments uses the sum of the component first moments (means) as the total system cost estimate (4:F-25; 21:36). Kazanowski, who used a less sophisticated approach to risk assessment than the method-of-moments, also summed the component means. He calculated individual component means with a formula using low, most-likely, and high costs, similar to the method discussed earlier for calculating component variances (9:153). In contrast, the Army's TRACE model uses the sum of the point estimates (modes) as the total system cost (8:46). Another method is used by the Air Force's computerized RISK model, where the median value of the total system cost distribution was selected as the best measure of total cost (7:7). The

median is that value whose cumulative probability of occurrence is 50%.

The literature is significantly more consistent on calculating the total system cost variance than it is on the measure of location. With the few exceptions that will be discussed shortly, analysts assume independence between components and sum their variances for the total system cost variance (16:130; 21:39; 12:20). The method-of-moments typifies this approach, where the variance of the total system is the sum of each component second moment (16:130). The literature clearly documents the need to include covariance terms in order to compute total system cost variance when components are dependent (21:39; 9:153).

Step Three. The final step translates the total system cost distribution into a cost-probability relationship. While the probability density function provides the decision maker with a graphic picture of the cost variability, probability assessments are difficult in this format because probabilities are represented by the area under the curve (4:II-8). A cumulative distribution function (c.d.f.) translates the area under the curve for each cost value into a cumulative probability. The c.d.f.'s in Fig. 2.3 allow the program manager, or other decision maker, to assess the probability of over or underrunning a given program cost. For example, according to Fig. 2.3(a), there is an 80% chance that a hypothetical program will cost less than \$200.

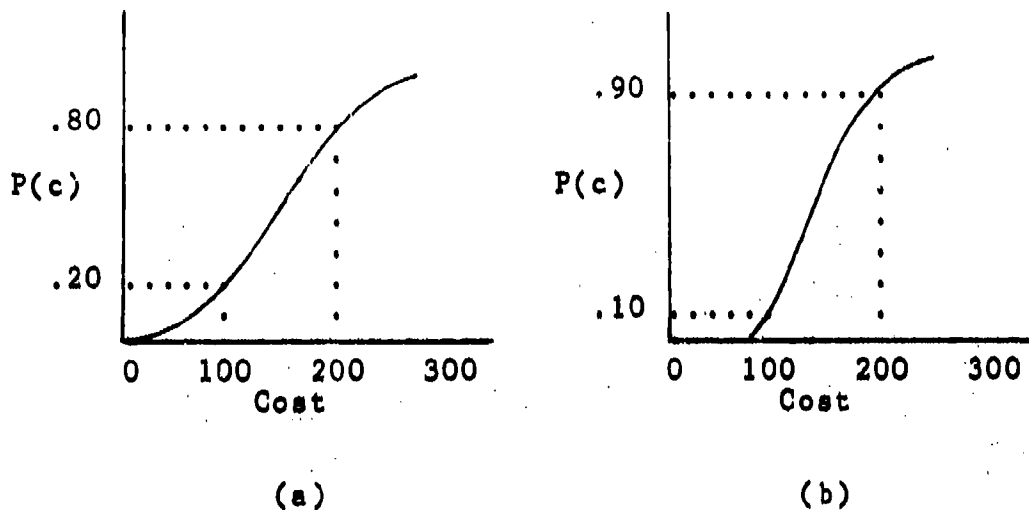


Fig. 2.3 Cumulative Cost Distributions

Stated another way, the probability of overrunning \$200 is 20%. Cumulative distribution functions also reveal the probability of a program outcome between any two costs. Figure 2.3(b), for example, shows the probability of achieving a cost between \$100 and \$200 is 80% (90%-10%). The probability of a similar cost outcome on Figure 2.3(a) is only 60%. A steeper c.d.f., therefore, indicates a smaller cost variance and less program cost-risk.

#### Current Perspectives on Component Dependency

Most current risk assessment techniques, such as the method-of-moments, rely on the erroneous assumption of independent system components. The problem with this assumption is that, in most circumstances, it understates true program cost-risk (9:150, 16:130).

The literature explains why analysts continue to rely

on this assumption in spite of its weakness. Black calls the independence assumption "troublesome" (16:130), but cites computational ease as one reason for its use. Analysts have not been able to apply the method-of-moments, for example, to situations with realistic component dependency. Because the method-of-moments technique is mathematically rigorous, derivation of moment functions with additive properties is not possible unless component dependencies are perfectly predictable (16:133). The technique becomes unwieldy if it incorporates any deviations from a strict linear relationship between components.

Worm feels that the continued reliance on the independence assumption rests in the difficulty in expressing dependency between components in a meaningful way. Quantifying covariance terms has been elusive because of the lack of historical data or of a method to estimate covariance from subjective information (21:39).

Only limited efforts have been taken to resolve the dependency problem. Wilder and Black's approach was to place an upward bound on the cost-risk of component dependency rather than estimate its true affect. Two situations were assessed - independence and complete linear dependence.

If we make the opposite assumption, i.e., that there is complete [positive] linear dependence among the project elements, in effect we say that any problem with any element will be reflected in all elements, and conversely any 'good luck' will be similarly reflected. This assumption may not be valid in many situations, but we feel that it is closer to reality than the independency assumption, and the region between the two

assumptions may be considered to bound the set of intermediate outcomes [16:130].

The method-of-moments was used to develop a cumulative cost distribution for both assumptions. The two curves, as shown in Fig. 2.4, bracket the actual, unknown curve. To apply this concept, Wilder and Black derived a series of dependent moments. The first dependent moment is the mean of the distribution, while the remaining  $k^{\text{th}}$  dependent moments are the  $k^{\text{th}}$  root of the  $k^{\text{th}}$  central moment. The relationship between the dependent and the independent moments is shown below:

$$A_1 = O_1 = D_1 = \mu \quad (2.1)$$

$$A_2 = C_2 = D_2^2 \quad (2.2)$$

$$A_3 = C_3 = D_3^3 \quad (2.3)$$

$$A_4 = C_4 - 3C_2^2 \quad (2.4)$$

$$C_4 = D_4^4 \quad (2.5)$$

where

$D_k$  =  $k^{\text{th}}$  dependent additive moment  
 $A_k$  =  $k^{\text{th}}$  independent additive moment  
 $C_k$  =  $k^{\text{th}}$  central moment  
 $O_1$  = first origin moment

The dependent moments have the same additive properties as the independent moments. Therefore, the dependent moments of the total program are the sums of the dependent moments of each component (16:130-131). Referencing Fig. 2.4, the independent curve underestimates the program risk for sys-

tems with predominantly positive dependence, while the dependent curve overestimates it. "It is a matter of judgement to determine where in this area the 'truth' lies" (16:131).

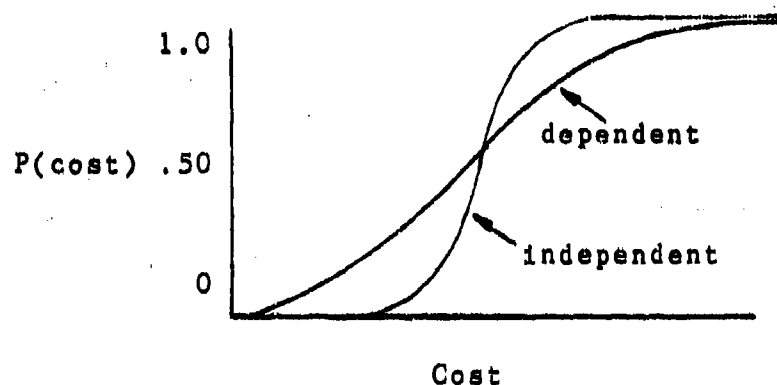


Fig. 2.4. Cumulative Distribution Functions  
Adapted from (16:132)

Worm offers a second approach. Rather than bound the problem, he attempts to structure the dependency between components. Using contract pricing items for system components, Worm breaks each component into independent and dependent portions. The dependent variation in each component is thought to stem from a common set of exogenous factors which affect all system components. To illustrate this concept, two components, such as labor and material costs, may both be excessive because of design immaturity. The dependency between these components is reflected by the influence of the common factor, design maturity, on both components. When more than one of the exogenous factors are present, their effect on each component is estimated cumula-

tively. The contribution of all exogenous factors is summed for each component and the aggregated value collectively becomes a single, separate and independent element. Each component is then viewed as the sum of two independent random variables and the traditional additive properties of the method-of-moments apply (21:39-43).

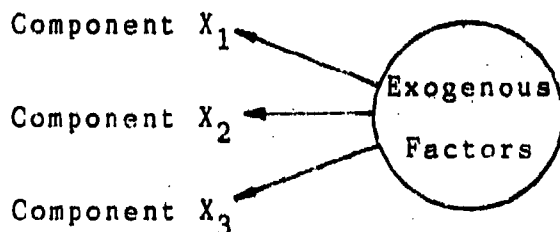
#### The Authors' Viewpoint

The successful inclusion of component dependence in cost-risk assessment has been elusive. Two approaches to dependency were observed. The authors' believe that neither approach satisfactorily resolves this problem.

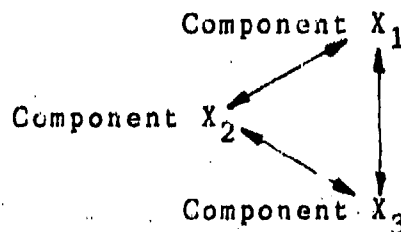
Wilder and Black bounded the problem by taking a totally dependent and independent perspective. Neither assumption is valid. They both intentionally mis-state true program risk. Quantification of covariance terms was unnecessary because the components had either no influence on each other or were maximum linearly dependent. Components with negative dependence were not considered. While some insight was gained, its information value is limited by the broad range of subjectivity left to the decision maker.

Worm's approach toward dependency is also inadequate. Even if all the exogenous factors are correctly identified, a significant weakness remains. By structuring dependency around a set of external influences, the interrelationship of the components themselves are ignored. As shown in Fig. 2.5(a), Worm's cost estimating relationships do not account

for the direct association between system components. The true cost dependence relationships which need to be modeled are shown in Fig. 2.5(b).



(a)



(b)

Fig. 2.5 Component Cost Dependence Relationships

### Conclusion

This chapter reviewed the general risk-assessment process. Techniques were briefly described for estimating a component's cost, variance, and distributional shape. Methods were described to transform this component information into the equivalent information for the total system. The difficulties in incorporating component dependence into a total system cost variance were discussed. Two approaches to this problem were reviewed, along with their limitations.

### III. Methodology

The literature review on cost-risk assessment, summarized in Chapter 2, revealed that cost dependent relationships are not used in current cost-risk assessment methods. This research attempts to overcome that limitation. The chapter is divided into two sections. The first section develops a cost-risk assessment method that incorporates component cost dependence. The second section explains the approach used to demonstrate the significance of component dependence in cost-risk assessment, and describes the procedure used to verify the internal validity of the proposed method. Fig. 3.1 shows a general scheme for the research.

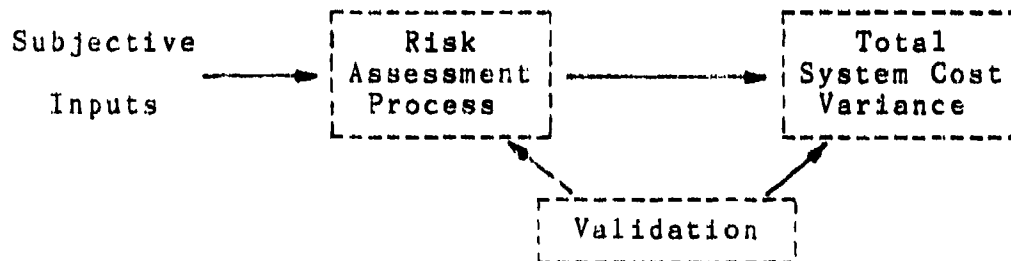


Figure 3.1 Generalized Cost-risk Assessment Method

#### Cost-risk Assessment Methodology

Total System Cost Variance. In the generalized form, total system cost variance can be expressed as the sum of component variances and the covariances between components. This generalized expression is shown in the following equation:

$$\text{TOT SYS COST VAR} = \sum_{i=1}^n \sum_{j=1}^n \text{Cov}(X_i, X_j) \quad (3.1)$$

where

$n$  = number of system components  
 $X_i$  =  $i$ th component of the system  
 $X_i, X_j$  = component pair within the system

and

$$\text{Cov}(X_i, X_j) = \text{Var}(X_i) \quad \text{when } i=j \quad (3.2)$$

Winkler and Hayes (19:186) define covariance in terms of expected values as

$$\text{Cov}(X_i, X_j) = E [ (X_i - E(X_i)) (X_j - E(X_j)) ] \quad (3.3)$$

When dealing with population samples, the expression is modified to

$$\text{Cov}(X_i, X_j) = E [ (X_i - \bar{X}_i) (X_j - \bar{X}_j) ] \quad (3.4)$$

The associative property, when applied to expected values, states that  $E(ab) = E(ba)$ . The order in which the terms are multiplied has no effect on the expected value. Therefore, Eq (3.4) can be written as:

$$E [ (X_i - \bar{X}_i) (X_j - \bar{X}_j) ] \\ = E [ (X_j - \bar{X}_j) (X_i - \bar{X}_i) ] \quad (3.5)$$

Therefore,

$$\text{Cov}(X_i, X_j) = \text{Cov}(X_j, X_i) \quad (3.6)$$

The covariance between any two pair of components appears twice in Eq (3.1), once as  $\text{Cov}(X_i, X_j)$  and once as  $\text{Cov}(X_j, X_i)$ . By substituting  $\text{Cov}(X_i, X_j)$  for  $\text{Cov}(X_j, X_i)$  whenever  $j$  is greater than  $i$ , the total number of covariance terms in Eq (3.1) is reduced by half. Only the covariance terms  $\text{Cov}(X_i, X_j)$  for  $i$  less than  $j$  remain in the equation. Furthermore, each term is multiplied by two to account for the substitution.

In the cost-risk assessment process, for a given system having two components,  $X_1$  and  $X_2$ , the determination of total system cost variance requires three steps.

Step One. Determine the variance for the cost distribution of Component  $X_1$  and Component  $X_2$ . This is usually accomplished by determining the low, most-likely, and high cost values and applying a variance assessment technique as described in Chapter 2.

Step Two. Determine the covariance between components  $X_1$  and  $X_2$ . Currently, this is a major problem in acquisition program cost estimation. A latter part of this chapter will offer a subjectively-based means of measuring

the strength of a dependency relationship.

Step Three. The cost variances and covariances of each component and its pairwise influence are summed. For the two component system, the following terms are generated:  $\text{Var}(X_1)$ ,  $\text{Var}(X_2)$ ,  $\text{Cov}(X_1, X_2)$ ,  $\text{Cov}(X_2, X_1)$ . From Eq (3.6), the third and fourth terms are equal, so

$$\text{Cov}(X_1, X_2) + \text{Cov}(X_2, X_1) = 2\text{Cov}(X_1, X_2) \quad (3.7)$$

The total system cost variance can then be expanded in equation form from Eq (3.1) to

$$\begin{aligned} \text{TOT SYS COST VAR} = & \text{Var}(X_1) + \text{Var}(X_2) \\ & + 2\text{Cov}(X_1, X_2) \end{aligned} \quad (3.8)$$

Limiting Combinations and Covariance Terms. In a system with more than two components, more than two covariance terms must be expressed, one for each pairwise combination. The number of covariance terms required is the combination expression:

$$\binom{n}{2} = n! / 2!(n-2)! \quad (3.9)$$

where

$n$  = number of components in the system

The number of pairwise combinations rises quickly as the

number of components in the system rises. For example, in a system with three components, the number of covariance terms required is:

$$\binom{3}{2} = 3! / 2!(3-2)! = 3 \quad (3.10)$$

However, the required combinations for a system with ten components is:

$$\binom{10}{2} = 10! / 2!(10-2)! = 45 \quad (3.11)$$

Since much larger systems are not uncommon, the authors will simplify the research by defining a system as a linear series of components. Components will have, at most, only one preceding and one subsequent task. A major assumption with this approach is that all component dependence is captured in a sequential manner. For example, dependence between components  $X_1$  and  $X_3$  is assumed to be accounted for by the intervening component,  $X_2$ . Component  $X_1$  has no cost relation to Component  $X_3$ , except as indirectly transferred through Component  $X_2$ . The system, therefore, is greatly simplified because it has only 'n-1' covariance terms rather than the theoretical maximum in Eq (3.9).

Covariance Interpretation. The preceding paragraphs have discussed the definition of covariance, its properties, and how it affects the total system cost variance. While a covariance term can assess the association between two com-

ponents, it is not without its flaws. There are three problems with covariance - all caused by its units of measurement.

First, the magnitude of the covariance term is extremely sensitive to the components' units of measurement. If the units of Component  $X_1$  and Component  $X_2$  are expressed in dollars, the covariance term is expressed with these units:  $\text{Cov}(X_1, X_2)$  (dollars) (dollars). If, however, the units are expressed in other terms, such as cents, the magnitude of the covariance will change even though the relationship between the components remains the same. Essentially, the magnitude of the covariance term can be manipulated by changing the units of the dependent components.

The second issue concerning units in the covariance term is that the units do not make sense. If Component  $X_1$  and Component  $X_2$  have units of pounds and miles respectively, the resulting covariance term will be expressed in pound-miles. This expression is confusing and serves no useful purpose in the determination of dependence between the two components.

The third problem with units deals with the comparability of different covariance terms. The different units that are used with the covariance term prohibit the comparison of the dependence between different pairs of components. The following example illustrates this problem.

$\text{Cov}(X_1, X_2)$  is expressed in the same units used to measure Component  $X_1$  and Component  $X_2$ . If Component  $X_1$  is measured

in pounds and Component  $X_2$  is measured in miles, the covariance between the components is measured in pounds times miles. Likewise, if Component  $X_3$  and Component  $X_4$  are measured in volts and square feet, respectively, the covariance between them is measured in volts times square feet. Obviously, this difference in units of measure makes it impossible to compare  $\text{Cov}(X_1, X_2)$  with  $\text{Cov}(X_3, X_4)$ . It is a comparison of apples and oranges.

Correlation Coefficient and Variance-Covariance Relationships. In order to compare covariances, the variances of the components (component costs in this case) are used to scale the covariance terms. The outcome is the correlation coefficient, Rho (R).

$$R_{X_i X_j} = \text{Cov}(X_i, X_j) / [\text{Var}(X_i) \text{Var}(X_j)]^{1/2} \quad (3.12)$$

The correlation coefficient ranges from -1 to +1. A value of -1 corresponds to maximum negative linear dependence; a value of +1 corresponds to maximum positive linear dependence; and a value of 0 corresponds to independence between the components' costs. These terms were defined in Chapter 1.

Eq (3.12) makes it possible to solve the problems of units of measure that were discussed earlier. For Component  $X_1$  and Component  $X_2$  in pounds and miles, Eq (3.12) scales the covariance term by eliminating the units of measurement. In order to avoid confusion and to illustrate this point, Eq

(3.12) is modified to show only the units in the equation.

$$R_{X_1X_2} = (\text{pound-miles}) / [ (\text{pounds})^2(\text{miles})^2 ]^{\frac{1}{2}} \quad (3.13)$$

The units in the equation cancel.  $Rho_{X_1X_2}$  is now a unitless value whose magnitude has been scaled. The relationship between Rho, component variances and component covariances is a critical relationship for this research. The popular assumptions of component independence and maximum positive linear dependence are based on this relationship. Later, this relationship will be used as a major part of the cost-risk assessment method that this research proposes.

The Independence Assumption. In Chapter 2 it was mentioned that since the quantification of dependency between the cost of system components is difficult to assess, many cost-risk assessment methodologies assume component independence. This assumption allows for the exclusion of the covariance terms from the total system cost variance equation. The independence assumption means that there is no association between the cost of one component and the cost of any other system component. The independence assumption also implies a Rho value of zero (19:187).

Therefore,

$$R_{X_1X_2} = \text{Cov}(X_i, X_j) / [ \text{Var}(X_i) \text{Var}(X_j) ]^{\frac{1}{2}} = 0 \quad (3.14)$$

If Rho is zero, the numerator of the ratio must be zero.

Therefore, the independence assumption implies

$$\text{Cov}(X_i, X_j) = 0 \quad (3.15)$$

The equation for total system cost variance, then, can be expressed as

$$\text{TOT SYS COST VAR} = \sum_{i=1}^n \text{Var}(X_i) \quad (3.16)$$

The effect of this deletion is obvious. Assessment of covariance terms is unnecessary under the independence assumption.

The Maximum Positive Linear Dependence Assumption.

Since the assumption of total independence seems to violate our intuitive understanding of how systems are developed, some cost-risk assessment methodologies assume total positive linear dependence between component costs. Total positive linear dependence means that if the cost of one component is higher than expected, not only will the the cost of all subsequent components be higher than expected, but the magnitude of the overrun can be predicted with absolute certainty. In essence, the total system cost is entirely determined by the cost of the first component in the system.

This assumption also enables us to compute the total system cost variance without estimating covariance terms. Again, the expression for Rho is used to demonstrate this phenomenon. Total positive linear dependence between two

components' costs is represented by a correlation coefficient equal to +1. When Rho is one, Eq (3.12) gives the following solution for the covariance:

$$R_{X_1 X_2} = \text{Cov}(X_1, X_2) / [\text{Var}(X_1) \text{Var}(X_2)]^{1/2} = 1 \quad (3.17)$$

and

$$\text{Cov}(X_1, X_2) = [\text{Var}(X_1) \text{Var}(X_2)]^{1/2} \quad (3.18)$$

In general,

$$\text{Cov}(X_i, X_j) = R_{X_i X_j} [\text{Var}(X_i) \text{Var}(X_j)]^{1/2} \quad (3.19)$$

The fact that Rho falls between -1 and +1 means that the  $\text{Cov}(X_1, X_2)$  is at its maximum value when Rho is one. Therefore, Eq (3.1) for the total system cost variance will also be maximized when total positive linear dependence is assumed.

For the two component example, making the substitution shown in Eq (3.18) in the equation for total system cost variance gives the following expression:

$$\begin{aligned} \text{TOT SYS COST VAR} &= \text{Var}(X_1) + \text{Var}(X_2) \\ &\quad + 2 [\text{Var}(X_1) \text{Var}(X_2)]^{1/2} \end{aligned} \quad (3.20)$$

Under the assumption of total positive linear dependence,

total system cost variance can be expressed without the use of covariance terms. As mentioned in previous chapters, this approach is not intuitively appealing because it assumes that extreme cost outcomes will ripple through the entire system. Using this assumption, therefore, inflates the total system cost variance.

The Maximum Negative Linear Dependence Assumption.

Component cost dependencies are not always positive - a low cost in one component does not always mean that other components' costs will be low; a high cost in one component does not always mean that other components' costs will be high. When a low cost in one component is associated with a high cost in another component, the dependency relationship is negative. The assumption of maximum negative linear dependency sets the value of Rho for all pairwise combinations of components equal to -1. Eq (3.19) indicates that if Rho is -1, the covariance term takes on its smallest possible value, which also happens to be negative.

$$\text{Cov}(X_i, X_j) = -1 [ \text{Var}(X_i) \text{Var}(X_j) ]^{\frac{1}{2}} \quad (3.21)$$

Therefore, Eq (3.1) will be minimized when total negative linear dependence is assumed.

Conclusions About Total Linear Dependence. These two assumptions, total positive linear dependence and total negative linear dependence, generate the maximum and minimum bounds for the true value of the total system cost variance.

Normally, it is expected that some covariance terms would be positive and some would be negative. The sum of the covariances may be negative or positive, depending on the sign and magnitude of the individual terms. To the extent that this sum differs from zero, the total system cost variance obtained under the assumption of total independence will either over- or underestimate the true system cost variance.

Estimating the Covariance. As Chapter 1 mentioned, the database does not exist to calculate covariance terms. This necessitates the use of subjective information to determine the degree of cost dependence between components. This information, solicited in terms that are understandable to program personnel, must be converted into a quantitative covariance value for risk assessment.

Direction of the Dependence. One piece of information that the analyst needs in order to estimate the covariance is the direction of the component dependencies. The direction can be implied simply by asking the program specialist how the extreme cost outcomes for one component (high or low) relate to the extreme cost outcomes for the other component. The high and low costs have the same meaning here as they did in the variance estimating techniques in Chapter 2. If, in the specialist's judgement, component cost outcomes tend to be complimentary (high-high or low-low), then the implied sign of the relationship is positive. If, on the other hand, the cost outcomes are

perceived to be generally opposite (high-low or low-high), then the relationship is assumed to be negative. The most-likely cost outcome could also be used, but the extreme values give the analyst the best insight into the direction of the component dependencies.

Strength of the Dependence. Program personnel will not be able to directly estimate the magnitude of the covariance because the covariance lacks any intuitive meaning. As mentioned earlier in this chapter, covariance may be expressed in units which are nonsensical and the magnitude of the covariance will fluctuate with the scale of the units of measurement. Conceivably, these problems could be overcome if subjective inputs were solicited in terms of the scaled covariance, Rho. Rho is unitless and is standardized on the interval  $(-1,1)$ . A more appropriate technique, however, would be to solicit subjective inputs in terms of the coefficient of determination, Rho squared.

Winkler and Hays describe the coefficient of determination as the proportion of total variation in a variable that is accounted for by a linear relationship with another variable (19:633). For example, a Rho squared value of .49 (Rho=.7) indicates that the relationship between the two variables accounts for 49% of the total variation which would occur if the variables were independent. Essentially, Rho squared and Rho are the same measure of association because the magnitude of one can be determined from the magnitude of the other. Rho lies on the interval  $(-1,1)$ .

Rho squared is always positive and is bound by (0,1).

The advantage of using Rho squared to assess the strength of dependency is that it measures variation in terms of proportions. Therefore, identical increments anywhere along its interval have the same 'explanatory power' because each fixed increment represents a constant proportion of total explained variation. For example, changes in Rho squared from .1 to .2 and from .8 to .9 both increase explained variation by 10%. Rho, however, is not as 'well-behaved' as Rho squared. Increases in Rho that are near the endpoints of its interval have greater 'explanatory power' than the same increment near the center of the interval. For example, a similar change in Rho from 1. to .2 and from .8 to .9 would explain 3% and 17% more variation, respectively. Program personnel are more likely to give more representative assessments of the magnitude of component dependence if the analyst uses Rho squared.

To apply the coefficient of determination, the program specialist is asked to rate the likelihood of the cost relationship that he identified earlier for the direction of the dependence. Any program personnel should be able to interpret a question such as, "On the scale shown in Fig. 3.2, what is the predictability of a component's cost outcome (high or low), given that the cost of the other component was high, or low"?

totally  
uncertain

moderately  
certain

completely  
certain

0 --.1 --.2 --.3 --.4 --.5 --.6 --.7 --.8 --.9 --1.0

Fig. 3.2  $R^2$  Measurement Scale

The values on the interval in Fig. 3.2 measure the cost association in a manner that is analogous to Rho squared. Each value on the interval represents the proportion of certainty in the cost dependence between components. This is similar to Rho squared, which measures the proportion of total variation that is explained by the relationship with another variable. Values near 0 imply component independence and values near 1 imply total linear dependence. Once the amount of dependence is assessed, the magnitude of Rho is calculated by taking the square root of the number that was selected on Fig. 3.2. Rho will be used later to calculate an estimate for the covariance.

An alternate method estimates the strength of the dependency without relying on any numerical input from the program specialist. Using descriptive categories, for example, the program specialist should be able to categorize the cost association between components as either weak, moderate, strong, or none. The number of categories could be expanded, but for simplicity, only these four will be considered here. An assignment for the magnitude of Rho can be made to each descriptive category. Devore lends credibility

to such an approach by giving general descriptive qualities to various Rho values (5:184). An example of these assignments are shown below in Table 3.1.

| Table 3.1                     |                  |
|-------------------------------|------------------|
| Rho Value Assignments         |                  |
| <u>Component Relationship</u> | <u>Rho Value</u> |
| None                          | 0                |
| Weak                          | .1 to .3         |
| Moderate                      | .3 to .7         |
| Strong                        | .7 to .9         |

The actual magnitude used for Rho could be the midpoint of the appropriate interval. The width of each interval will narrow as the number of descriptive categories is increased.

The magnitude of Rho, based on either technique, is merged with the assessment of the dependency direction. Combined, the two result in a positive or negative Rho value. An estimate of the covariance can now be made from the Rho value and the statistical relationships which were previously discussed with Eq (3.19).

$$\text{Cov}(X_i, X_j) = R_{X_i X_j} [ \text{Var}(X_i) \text{Var}(X_j) ]^{\frac{1}{2}} \quad (3.19)$$

The covariance is calculated from the component variances and the Rho estimate that was determined above.

### Validation Methodology

The application of this cost-risk assessment technique to a real system would not provide an adequate basis for validating the methodology because each program represents only a single event from a unique distribution. The final cost outcome for any single program provides insufficient information to test the accuracy, or lack thereof, of the variance produced by risk assessment techniques. For example, a cost outcome that deviates substantially from the initial estimate could imply that the true system cost variance was underestimated. This is illustrated in Fig. 3.3(a). However, it could also be true that the total system variance is accurately estimated, as in Fig. 3.3(b), but the 'most-likely' cost estimate is in error. Finally, both the point estimate and the variance may be accurately estimated, but the outcome is a 'rare event', as in Fig. 3.3(c). The problem with only one data point is that the analyst will never know the true state of affairs.

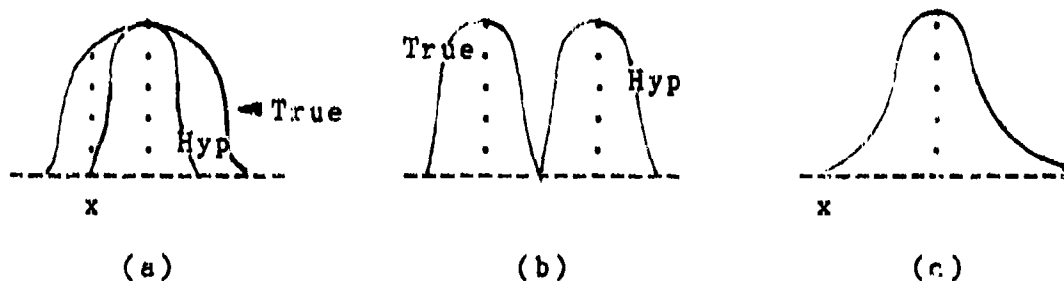


Fig. 3.3 a/b/c True vs Hypothesized Cost Distributions

Likewise, a cost outcome near the mode of the hypothesized distribution may give the analyst a 'warm feeling' which is entirely unwarranted. The fact that the outcome occurred near the mode of the hypothesized distribution says very little about the accuracy of the estimated total system variance. Furthermore, the outcome could be an outlying observation from a true distribution that differs significantly from the hypothesized distribution. Again, the evidence is inadequate to draw any reasonable conclusions.

Because the cost-risk methodology can never be validated, in the true sense, by real-world application, the authors propose a simulation technique as a quasi-validation tool. If the subjective inputs used in the method are assumed to be correct, the effect of component dependence on the total system cost variance is indicated by comparing the results of the simulation with the case where no dependencies exist. When errors in the subjective inputs are considered, simulation will lend insights on the sensitivity of the total system cost variance to those errors.

What is Simulation? Banks and Carson (1:2) describe simulation as the imitation of a real-world system. The behavior of the real system is studied by developing a model which describes the salient characteristics of the real system through mathematical and logical relationships. Models that do not use random variables as inputs are deterministic. These models have a known set of inputs which result in a unique output. A stochastic simulation has one

or more random inputs and leads to random model outputs (1:10). The simulation model proposed in this thesis will generate repeated estimates of the total system variance from stochastic inputs which measure component dependency. Multiple iterations of the simulation generates an estimate of the true distribution of total system variance for the system described by the model.

Description of the Simulation Model. The model used in this thesis simulates a generic system as illustrated in Fig 3.4, where 'n' is the number of system components. The components are completed in sequence such that each component has only one precedent task.

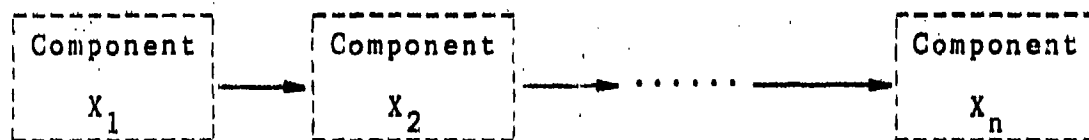


Fig. 3.4 Generic Sequential System

This simplification restricts the number of possible systems to consider when compared to a WBS configuration. Given 'n' system components, a WBS hierarchy has the flexibility of describing the component relationships in a variety of ways, while the sequential system has only one. Such a restriction is desirable because it allows us to examine dependency relationships in their simplest form. This simplicity also makes the system easier to model because the system definition can be changed by varying system size without

having to redefine its 'shape'. Note, however, that this simplification is made for research purposes only. In no way does it restrict the cost-risk assessment method from application to a WBS hierarchy. As mentioned earlier, the simplification reduces the number of component pairs for the system to ' $n-1$ '. This methodology can easily be extended to any WBS framework with potentially as many component cost relationships as described by Eq (3.9).

The simulation model stochastically generates Rho values for the ' $n-1$ ' component pairings based on a triangular distribution with (0,1) bounds. The triangular distribution was chosen because it is unimodal and easy to manipulate. With the fixed endpoints, the researchers have complete control over the distribution by changing only one value, the mode. The mode of the distribution represents a Rho value that could likely result from a program specialist's assessment of component dependence. Manipulating the mode allows the researchers to vary the program specialist's estimates of the component relationships. The mode applies for all ' $n-1$ ' component pairs, but the exact Rho value generated for each pair will randomly deviate from the mode according to the distribution. The mode is specified in the simulation as either .50, .707, or .866.

A uniform distribution is then used to randomly select Rho values which are subsequently given a negative sign to indicate a negative dependency. The approximate proportion of the Rho values identified as negative dependencies is

controlled by the modeler's selection. The proportion is set to either 1.0, .75, or .50.

The model then uses component variances, which are held constant throughout the simulation, and the 'n-1' Rho values to calculate the covariance terms for each sequential pair of components. Total system variance is then calculated by summing the variance and covariance terms. Each observation from the simulation represents one total system variance estimate using randomly generated Rho values.

The model is then re-executed so that it generates a new series of Rho values using the same triangular distribution and proportion of negative Rhos. Covariance terms and total system variance are recalculated as before. The output of this simulation is another estimate of total system variance. Multiple iterations are performed to provide a distribution of probable total system variances under the stated characteristics of the system.

Sensitivity Analysis. As mentioned at the beginning of this chapter, the objectives of the validation effort are 1) to demonstrate the significance of component dependence in cost-risk assessment, and 2) to verify the internal validity of the proposed method. The researchers do not believe that the answers from these two objectives will be similar for all systems. Instead, modeling component dependence may be more critical for certain systems. Similarly, there may be some system 'limits' beyond which the proposed method is not a desirable technique. For this reason, the simulation

model tests a variety of system configurations. Table 3.2 summarizes those model inputs which characterize each system and the values they will assume. These values were chosen in order to investigate the broad spectrum of dependence scenarios that could occur in a system acquisition program.

Table 3.2

System Configurations

| <u>Model Parameter</u>                  | <u>Symbol</u> | <u>Values Assumed</u> |      |        |
|-----------------------------------------|---------------|-----------------------|------|--------|
| Mode of triangular distribution for rho | m             | .5                    | .707 | .866 * |
| Proportion of positive rhos             | p             | 1.0                   | .75  | .50    |
| Number of components                    | n             | 5                     | 50   | 100    |
| Error in rho squared **                 | e             | .10                   | .20  |        |

\* Values represent rhos which explain 25%, 50%, and 75% of total variation.

\*\* To be discussed later in this chapter.

Simulations will be performed for all 54 combinations of input parameters. The number of iterations required to provide an appropriate estimate of total system variance for each system configuration is documented in Appendix A. The computer algorithm and associated documentation to perform these simulations is found in Appendix B.

Is Dependence Important? One objective of the validation effort is to determine if component dependence should be an important consideration in cost-risk assessment. Spe-

cifically, what impact does component dependency have on the total system cost variance? The simulation model was designed to answer this question. Recall that under the independence assumption, the total system cost variance is merely the sum of all of the component variances. The simulation model sums the component variances to attain the total system variance for the independent system. The model also simulates 54 different system configurations with various levels of component dependency. A distribution of the total system cost variance will be output for each of these systems. By comparing the total system cost variance under the independence assumption with total system variance distribution under the different system configurations, the impact of component dependence can be assessed.

A measure of significance is needed to compare independence with dependence. The ideal measure would be to compare the affect of both variances on the confidence intervals for a system's cost estimate using Eq (3.22).

$$\text{Interval Estimate} = \text{Point Estimate} \pm [(k) (s)] \quad (3.22)$$

In Eq (3.22), k represents the number of standard errors that must be added and subtracted from the point estimate to arrive at the interval estimate. It is a function of the probability distribution of cost outcomes and the desired level of confidence that the actual cost will fall within the interval. The standard error is represented by s. The

collective term,  $[(k) (s)]$ , is the precision of the interval.

The above confidence interval in Eq (3.22) would be incorrect if it used the independent system standard error ( $s_I$ ) when, indeed, the system has component dependence. The dependent standard error ( $s_D$ ) would have to be used to provide the true confidence interval. Comparing the two confidence intervals would demonstrate the ultimate impact of component dependence on system cost uncertainty. This measure, however, is not available here because no system cost estimate was used, or assumed. This risk assessment method simply assumed that a cost estimate is available from current estimating techniques. Furthermore,  $k$  requires an assumption about the cost distribution's shape, which is beyond the scope of this research.

Although this research cannot directly compare the two cost intervals, it can make a direct comparison of the interval precision, as shown in Eq (3.23).

$$[(k) (s_D)] / [(k) (s_I)] \quad (3.23)$$

Because  $k$  has a constant value, Eq (3.23) simplifies to  $[(s_D) / (s_I)]$ . The magnitude of this ratio indicates the relative impact of dependence relationships on the system's confidence interval. The ratio indicates to what extent the precision of the interval is over or understated. If the ratio is close to one, component dependency is not signifi-

cant and the difference between the cost interval using  $s_D$  and  $s_I$  is small. As the ratio moves away from one, in either direction, the component dependency relationships are more significant. Under these conditions, confidence intervals for weapon system cost estimates become increasingly unreliable using the independent standard error.

Because this research focuses on variances rather than standard errors, the authors will use the ratio of the two total system cost variances as the measure of significance. The relationship between the ratio of the variances and the ratio of the standard errors is shown in Eq (3.24).

$$\begin{array}{l} \text{RATIO} \\ \text{of} \\ \text{VARIANCES} \end{array} = (s_D^2 / s_I^2) = (s_D / s_I)^2 \quad (3.24)$$

The mean of the total system cost variance distribution will be used as the  $s_D^2$  for each system. The accuracy of this value in estimating the true mean of the distribution is discussed in Appendix A. The authors consider 1.2 an overestimate and .80 an underestimate of the precision  $[(k)(s)]$  in Eq (3.23) to be acceptable. Therefore, any ratio of total system cost variance that is between .64 and 1.44 meets the acceptance criteria. For those systems, the affects of component dependence is not considered to be significant.

Is the Methodology Internally Valid? A second ob-

jective of the validation effort is to determine the internal validity of the cost-risk assessment method. The internal validity indicates the ability of the analyst to predict the total system cost variance for a system with component dependence when the program specialist's subjective assessments are erroneous. Realistically, the specialist will not be able to estimate the strength of dependencies accurately. Additional error will be induced by the method which converts the specialist's inputs into a Rho value. This is especially true with the flexibility of Rho assignments to descriptive categories. As a result, errors in the Rho estimate will affect the calculation of total system cost variance. The simulations described so far have assumed that the analyst has an accurate Rho estimate. We assumed that the mode of the triangular distribution and the proportion of negative dependencies were correctly identified. The simulation will output a distribution of the total system variance under this assumption; we refer to it as the 'normal' case. However, this distribution would be affected by errors in estimating Rho, as demonstrated in Fig. 3.5.

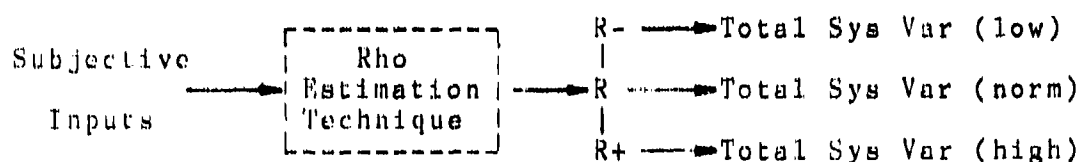


Fig. 3.5 Cost-risk Assessment with Rho Error

The simulation model evaluates the impact of the error in

subjective inputs by placing upper and lower bounds on the Rhos that are randomly generated. These bounds represent the analysts confidence in the Rho estimate. If an analyst feels uncertain about his estimate of Rho, he could place bounds around his estimate and also calculate the total system variance using these bounds as a way of evaluating the potential effect of his estimating error.

A method to bound Rho would be to bound the percent of total variation represented by Rho squared. For example, suppose the analyst feels that Rho is approximately .7, which equates to a Rho squared of .49. This figure indicates that the relationship between the two variables accounts for 49% of the total variation which would occur if the variables were completely independent. If the analyst felt that the correct total variation should not vary by more than plus or minus five percent, the upper and lower bounds on Rho squared would correspond to 54% and 45%, respectively. Taking the square roots of these percentages results in upper and lower bounds on Rho.

Rho squared error is introduced into the simulation using the parameter 'c'. Two values will be assigned, .1 and .2. The .1 value was the basis of the above example, where the bound on Rho squared for a possible 10% error ( $\pm 5\%$ ) in total explained variation. The simulation model 'splits' the 'p' value equally around the Rho squared for the 'normal' case. Any bounds which fall outside of the 0 and 1 interval for Rho squared are truncated to 0 or 1.

The lower and upper bounds on Rho can be used to calculate a total system variance which is consistently higher or lower than the total system variance for the 'normal' case. Recall that the total system variance is calculated by summing all system variance and covariance terms. Therefore, given constant variances, the total system variance is affected by the changing only values of the covariance terms. The covariance was defined in Eq (3.19) as 
$$\text{Cov}(X_i, X_j) = R_{X_i X_j} [\text{Var}(X_i) \text{Var}(X_j)]^{1/2}$$
. From this equation, the covariance for each component pair is maximized when positive Rhos assume their highest magnitude and negative Rhos assume their lowest. Similarly, covariance is minimized when positive and negative Rhos assume their lowest and highest values, respectively. If the upper and lower Rho values for each component pair are used accordingly in the computation of the total system variance, the resultant output distributions reveal the highest and lowest possible deviations of total system variance from the 'normal' case.

Large overlaps between the 'normal' and 'low' and between the 'normal' and 'high' distributions indicate only minor sensitivity to Rho estimating error. If the model produces 'low' and 'high' distributions that are close enough to the 'normal case', then the methodology may be applicable to real systems with predominantly similar characteristics. However, the model may reveal that predictions of total system cost variance deviate unacceptably when Rhos

are slightly inaccurate. This tells us that the methodology requires further refinement, or that it should be selectively applied to only the most 'forgiving' systems.

Overlap of the 'low' and 'normal' distributions will be measured by counting the number of observations on the 'low' distribution that appear above the 5, 10, and 15 percentiles of the 'normal' case. Overlap of the 'high' and 'normal' distributions will be measured by counting the number of observations on the 'high' distribution that fall below the 95, 90, and 85 percentiles of the 'normal' case. This technique provides the researchers with a standard measure of overlap for the 54 systems without making any assumptions about the shape of their three variance distributions. It also provides a 'well-behaved' measurement that is not sensitive to the location of 'rare events' in the 'normal' case.

A decision rule is needed to determine what constitutes 'significant' overlap within the six percentiles on the 'normal' distribution. The authors feel that the standards in Table 3.3 are reasonable. Our intention is to determine how well each system, on the whole, overlaps the 'normal' case. The above criteria yields six standards for each of the 54 systems, however, the authors do not want a proliferation of standards to 'mask' the results. For this reason, we choose three criteria to measure each system's performance against the standards.

Table 3.3

Acceptance Standards

| <u>'normal'</u><br><u>percentile</u> | <u>% of 'low'</u><br><u>observations</u><br><u>above %tile</u> | <u>% of 'high'</u><br><u>observations</u><br><u>below %tile</u> |
|--------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|
| .05                                  | 70%                                                            | -                                                               |
| .10                                  | 60%                                                            | -                                                               |
| .15                                  | 50%                                                            | -                                                               |
| .95                                  | -                                                              | 70%                                                             |
| .90                                  | -                                                              | 60%                                                             |
| .85                                  | -                                                              | 50%                                                             |

Criteria #1 is the most stringent of the three. It describes only those systems which meet all six of the standards in Table 3.3. This criteria identifies those systems for which the proposed risk assessment methodology has strong predictive ability. Criteria #2 describes those systems with both 'high' and 'low' distributions that meet at least two of their three standards. In other words, neither the 'high' nor 'low' distributions can fail to meet more than one standard. The risk assessment methodology is moderately able to predict total system cost variance for these systems. Those systems which met Criteria #1 are excluded from this category. Criteria #3 describes all other systems. For these systems, the proposed methodology exhibits its weakest application potential.

Because the selection of standards is subjective, the researchers feel that a second set of standards will strengthen the reliability of the findings. The second set

of standards will be similar to those in Table 3.3, except that the percentage of overlap for each percentile will be 'loosened' by 20 percent (50%, 40%, 30%). Criterion #1, #2 and #3 will also be applied to this set of standards. Hopefully, this approach will lend better visibility to any trends that might not emerge with a more rigid standard.

### Conclusion

This chapter has outlined the methodology that will be used to incorporate component dependency into an assessment of total system cost variance. The underlying statistical framework was developed as well as a technique to apply those concepts. A validation methodology of the risk assessment technique was proposed. The following chapter analyzes the results of this methodology.

#### IV. Analysis

This chapter will apply the research methodology developed in the previous chapter to assess the results of the simulation. The data that is generated will be used to assess the need for the incorporation of component dependence in cost-risk assessment. The final portion of the chapter is devoted to a discussion of the internal validity of the model and its implications for the cost analyst.

The simulation was performed for each of the possible system configurations in Chapter 3, Table 2. The output files of the Fortran simulation (OUT1 - OUT54) were input into the BMDP statistical package which sorted the total system cost variances for the 'low', 'normal', and 'high' distributions, plotted histograms of these distributions, and provided pertinent statistical information (6:74-78, 112-113, 124-132). The BMDP filenames (RUN1 - RUN54) are listed in Table 4.1, below, with a list of the parameters that were modeled. The BMDP code is found in Appendix C. The histograms are provided in Appendix D.

##### Ratio of Variances

As mentioned in Chapter 3, the ratio of variances was used as a measure of the significance of component dependence in cost-risk assessment. Table 4.2 gives the total cost variance assuming independence for each system and summarizes

the calculations for the ratio of variances.

Table 4.1

System Configurations by Run Number

| e = .2      |          |          | n = 5       |          |          | e = .1      |          |          |
|-------------|----------|----------|-------------|----------|----------|-------------|----------|----------|
| <u>RUN#</u> | <u>m</u> | <u>p</u> | <u>RUN#</u> | <u>m</u> | <u>p</u> | <u>RUN#</u> | <u>m</u> | <u>p</u> |
| 1           | .500     | 1.0      | 10          | .500     | 1.0      |             |          |          |
| 2           | .500     | .75      | 11          | .500     | .75      |             |          |          |
| 3           | .500     | .50      | 12          | .500     | .50      |             |          |          |
| 4           | .707     | 1.0      | 13          | .707     | 1.0      |             |          |          |
| 5           | .707     | .75      | 14          | .707     | .75      |             |          |          |
| 6           | .707     | .50      | 15          | .707     | .50      |             |          |          |
| 7           | .866     | 1.0      | 16          | .866     | 1.0      |             |          |          |
| 8           | .866     | .75      | 17          | .866     | .75      |             |          |          |
| 9           | .866     | .50      | 18          | .866     | .50      |             |          |          |
| e = .2      |          |          | n = 50      |          |          | e = .1      |          |          |
| <u>RUN#</u> | <u>m</u> | <u>p</u> | <u>RUN#</u> | <u>m</u> | <u>p</u> | <u>RUN#</u> | <u>m</u> | <u>p</u> |
| 19          | .500     | 1.0      | 28          | .500     | 1.0      |             |          |          |
| 20          | .500     | .75      | 29          | .500     | .75      |             |          |          |
| 21          | .500     | .50      | 30          | .500     | .50      |             |          |          |
| 22          | .707     | 1.0      | 31          | .707     | 1.0      |             |          |          |
| 23          | .707     | .75      | 32          | .707     | .75      |             |          |          |
| 24          | .707     | .50      | 33          | .707     | .50      |             |          |          |
| 25          | .866     | 1.0      | 34          | .866     | 1.0      |             |          |          |
| 26          | .866     | .75      | 35          | .866     | .75      |             |          |          |
| 27          | .866     | .50      | 36          | .866     | .50      |             |          |          |

| Table 4.1 (continued)               |      |         |        |      |     |
|-------------------------------------|------|---------|--------|------|-----|
| System Configurations by Run Number |      |         |        |      |     |
| e = .2                              |      | n = 100 | e = .1 |      |     |
| RUN#                                | m    | p       | RUN#   | m    | p   |
| 37                                  | .500 | 1.0     | 46     | .500 | 1.0 |
| 38                                  | .500 | .75     | 47     | .500 | .75 |
| 39                                  | .500 | .50     | 48     | .500 | .50 |
| 40                                  | .707 | 1.0     | 49     | .707 | 1.0 |
| 41                                  | .707 | .75     | 50     | .707 | .75 |
| 42                                  | .707 | .50     | 51     | .707 | .50 |
| 43                                  | .866 | 1.0     | 52     | .866 | 1.0 |
| 44                                  | .866 | .75     | 53     | .866 | .75 |
| 45                                  | .866 | .50     | 54     | .866 | .50 |

Based on the acceptance criteria described in Chapter 3, component dependence is considered significant when the ratio of variances is less than .64 or greater than 1.44. Table 4.2 reveals that component dependence is significant in a majority of the systems that were modeled. Closer examination of the table shows several trends. The first trend has to do with the number of components in the system, 'n'. The rows of Table 4.2 show identical system configurations except for the number of components. The ratios across each row tend to be clustered near the same value. These results indicate that system size does not significantly affect the movement of total system cost var-

iance away from the independent case. This implies that the number of system components should not affect the decision to model component dependence in cost-risk assessments.

Table 4.2

Ratio of Variances\*

| n = 5      |              | n = 50     |              | n = 100    |              |
|------------|--------------|------------|--------------|------------|--------------|
| VAR = 336  |              | VAR = 2339 |              | VAR = 4616 |              |
| <u>RUN</u> | <u>Ratio</u> | <u>RUN</u> | <u>Ratio</u> | <u>RUN</u> | <u>Ratio</u> |
| 1&10       | 1.71         | 19&28      | 1.81         | 37&46      | 1.85         |
| 2&11       | 1.38         | 20&29      | 1.40         | 38&47      | 1.43         |
| 3&12       | 1.03         | 21&30      | 1.00         | 39&48      | 1.00         |
| 4&13       | 1.82         | 22&31      | 1.92         | 40&49      | 1.97         |
| 5&14       | 1.50         | 23&32      | 1.46         | 41&50      | 1.49         |
| 6&15       | 1.03         | 24&33      | 1.00         | 42&51      | 1.00         |
| 7&16       | 1.90         | 25&34      | 2.01         | 43&52      | 2.06         |
| 8&17       | 1.54         | 26&35      | 1.50         | 44&53      | 1.53         |
| 9&18       | 1.03         | 27&36      | 1.00         | 45&54      | 1.00         |

\* Because the calculations for this table were based on the 'normal' case, Rho estimation error does not affect the ratios for these runs.

Caution should be taken, however, in generalizing this conclusion to systems with a WBS hierarchy. The conclusion that system size is insignificant seems to be more limited to the simplified systems that this research addressed. To illustrate, consider a 30 component system whose depend-

encies have been simplified by the linear dependence assumption. The ratio of the dependent and independent variances for this system is shown in Eq (4.1).

$$\text{Ratio} = \left[ \sum_{i=1}^{30} \text{Var}(X_i) + 2 \sum_{i=2}^{30} \text{Cov}(X_{i-1}, X_i) \right] / \sum_{i=1}^{30} \text{Var}(X_i) \quad (4.1)$$

Suppose that the system size is increased by one component. The new ratio of the cost variances is shown in Eq (4.2).

$$\begin{aligned} \text{Ratio} = & \left[ \sum_{i=1}^{30} \text{Var}(X_i) + 2 \sum_{i=2}^{30} \text{Cov}(X_{i-1}, X_i) + \text{Var}(X_{31}) \right. \\ & \left. + 2 \text{Cov}(X_{30}, X_{31}) \right] / \left[ \sum_{i=1}^{30} \text{Var}(X_i) \right. \\ & \left. + \text{Var}(X_{31}) \right] \quad (4.2) \end{aligned}$$

The numerator of the ratio is increased by the variance of the new component plus twice the covariance between the new component and its immediate predecessor. The denominator of the ratio is increased by the variance for the new component.

System size has a greater affect on the ratio of the two cost variances when the system is defined by a WBS hierarchy. Eq (4.3) shows the ratio for the 30 component system which has been enlarged by the additional component. Comparing Eqs (4.3) and (4.2) shows that adding another component may have a significantly greater affect when there are no constraints placed on the covariance terms.

$$\begin{aligned}
 \text{Ratio} = & \left[ \sum_{i=1}^{30} \text{Var}(X_i) + \sum_{i=1}^{30} \sum_{j=1}^{30} \text{Cov}(X_i, X_j) + \text{Var}(X_{31}) \right. \\
 & \left. + \sum_{i=1}^{30} \text{Cov}(X_i, X_{31}) + \sum_{j=1}^{30} \text{Cov}(X_{31}, X_j) \right] \\
 & / \left[ \sum_{i=1}^{30} \text{Var}(X_i) + \text{Var}(X_{31}) \right] \quad (4.3)
 \end{aligned}$$

The denominator of both equations increased by the same amount, however, the numerator of Eq (4.3) may increase significantly more than the numerator of Eq (4.2). The numerator of Eq (4.3) includes not only another variance term, but also the sum of 60 covariance terms, as opposed to 2 additional covariance terms in Eq (4.2). This could make a significant difference.

Since the results in Table 4.2 are not sensitive to system size, only Column 1 of the table will be used in order to simplify the remaining discussion. Although only the n=5 system will be illustrated, the following trends also apply to the systems with 50 and 100 components.

The first trend deals with the relationship between the proportion of positive rhos, 'p', and the mode of the triangular distribution, 'm', which produced the Rho values. Table 4.2, Column 1 is reproduced below along with the corresponding values of 'm' and 'p'. High proportions of positive Rhos consistently produced higher deviations of total system cost variance from the independent case. This is evident by the high ratios for RUN1, RUN4, and RUN7 when p=1.0 .

Table 4.3

m and p Values for RUN1-RUN9

| <u>Run</u> | <u>Ratio</u> | <u>m</u> | <u>p</u> |
|------------|--------------|----------|----------|
| 1          | 1.71         | .500     | 1.00     |
| 2          | 1.38         | .500     | .75      |
| 3          | 1.03         | .500     | .50      |
| 4          | 1.82         | .707     | 1.00     |
| 5          | 1.50         | .707     | .75      |
| 6          | 1.03         | .707     | .50      |
| 7          | 1.90         | .866     | 1.00     |
| 8          | 1.54         | .866     | .75      |
| 9          | 1.03         | .866     | .50      |

As this proportion decreases, so does the ratio of variances. A decrease in 'p' from 1.0 to .75 changes the ratio for RUN4 from 1.8 to 1.5. The ratios for RUNs 1 and 7 also changed by approximately .3. A reduction in the proportion from .75 to .50 changes the ratio for RUN 5 from 1.5 to 1.0. A similar decrease is evident in RUNs 2 and 8.

These results can be explained by recalling that the only difference between the dependent and independent total system cost variances is the inclusion of the covariance terms. If the sum of the covariance terms significantly deviates from zero, a difference in the ratio of the two

variances will result. The sum of the covariance terms is very sensitive to the proportion of those covariances which are positive. When the proportion is large, there are relatively few negative covariance terms to offset the increase in the total system cost variance caused by the positive covariances. As shown in Table 4.3, when half of the Rhos were positive, the results closely approximate the independent system for all values of the mode used to generate the Rhos.

Comparison of RUNs (1-3), RUNs (4-6), and RUNs (7-9) demonstrates the influence of the mode of the triangular distribution on the ratio of variances. Higher values of Rho consistently produce greater deviations from the independent total system cost variance. These results are explained by recalling the relationships in Eq (3.19). For component pairs and their associated variances

$$\text{Cov}(X_1, X_j) = R_{X_1 X_j} [ \text{Var}(X_1) \text{Var}(X_j) ]^{1/2} \quad (3.19)$$

The magnitude of Rho, as modeled by the mode, determines the magnitude of the covariance terms. With other model parameters held constant, large magnitudes of Rho (+ or -) drive the magnitude of the sum of the covariances. As mentioned above, as the sum of the covariances deviates from zero, the ratio of total system cost variances will deviate from 1.

Stepwise changes in 'm' from .5 to .707 and from .707 to .866 increase the ratio of the variances between runs by

approximately .1. For example, the ratio for RUNs 1, 4, and 7 are 1.7, 1.8, and 1.9, respectively. Each of these step-wise changes in the mode represent an increase in total explained variation of 25% (Reference Chapter 3, Table 1).

For the relevant ranges of the proportion of positive Rhos and modal values chosen in this simulation, total system cost variance is more sensitive to the proportion of positive Rhos, 'p', than to the range of mode values. Table 4.3 shows that varying 'p' from its lowest to highest value (in increments of 25%) increases the variance ratio by approximately .8. Varying 'm' from its lowest to highest values (in increments of 25% of explained variation) increases the ratio by only .2. This result has a favorable implication for the cost-risk assessment method. In the 'real world', determination of the direction of component dependency should be easier to subjectively assess than the exact magnitude of the dependence relationship.

#### Internal Validity

The high and low overlap percentages generated by the validation model are displayed in Appendix E. These values were compared to the standards and acceptance criteria that were presented in the previous chapter. The results of the first standard (70-60-50) are displayed in Table 4.4.

The purpose of this section is to determine the ability to predict total system cost variance when subjective estimates for Rho squared are in error. This parameter, 'e',

was given two values, .2 and .1. As expected, more runs had acceptable overlap when  $e=.1$  than when  $e=.2$ . This makes sense intuitively, since one would expect a better estimate of the total system cost variance when the value for Rho was estimated with greater accuracy. In Table 4.4, Matrices 2, 4, and 6 were generated when the Rho squared error was .1 and Matrices 1, 3, and 5 were generated with the error at .2. There are 18 of 27 runs that met Criteria #1 when  $e=.1$ . Only 8 of 27 runs have met this criteria when  $p=.2$ . As the program personnel's ability to subjectively estimate component dependence increases, the ability of the cost-risk assessment method to accurately estimate total system cost variance increases significantly.

While  $R^2$  error is the parameter used to assess internal validity, the other model parameters influence the applicability of the method. Looking again at Table 4.4, the first column in each matrix, except Matrix 2, shows a consistent weakness in predicting total system cost variance. Whether  $R^2$  error is .1 or .2, the cost-risk assessment method loses predictive capability as the proportion of positive dependencies approaches 1.0. The number of components in the system also appears to affect the accuracy of the methodology. When 'n' is low, the predictive capability of the method is at its best. This is shown by the large number of systems in Matrices 1 and 2 that meet Criteria #1.

Table 4.4

Internal Validity Result Matrix

Standard: 70-60-50

MATRIX 1

n=5

p

e=.2

1.0 .75 .50

.500  
m .707  
.866

|   |    |    |
|---|----|----|
| 1 | 2* | 3* |
| 4 | 5* | 6* |
| 7 | 8* | 9* |

MATRIX 2

n=5

p

e=.1

1.0 .75 .50

.500  
m .707  
.866

|     |     |     |
|-----|-----|-----|
| 10* | 11* | 12* |
| 13* | 14* | 15* |
| 16* | 17* | 18* |

MATRIX 3

n=50

p

e=.2

1.0 .75 .50

.500  
m .707  
.866

|    |      |     |
|----|------|-----|
| 19 | 20   | 21  |
| 22 | 23   | 24* |
| 25 | 26** | 27* |

MATRIX 4

n=50

p

e=.1

1.0 .75 .50

.500  
m .707  
.866

|    |     |     |
|----|-----|-----|
| 28 | 29* | 30* |
| 31 | 32* | 33* |
| 34 | 35* | 36* |

MATRIX 5

n=100

p

e=.2

1.0 .75 .50

.500  
m .707  
.866

|    |    |    |
|----|----|----|
| 37 | 38 | 39 |
| 40 | 41 | 42 |
| 43 | 44 | 45 |

MATRIX 6

n=100

p

e=.1

1.0 .75 .50

.500  
m .707  
.866

|    |      |     |
|----|------|-----|
| 46 | 47   | 48  |
| 49 | 50** | 51* |
| 52 | 53*  | 54* |

\* meets Criteria #1

\*\* meets Criteria #2

note: no entry means the system meets criteria #3

However, as system size increases, the number of runs that meet the criteria decreases in Matrices 3 and 4, and again in Matrices 5 and 6. Finally, the strength of the component dependencies, as described by the mode, appears to have a limited effect on predicting total system cost variance. As 'm' increases from .5 to .866, in all six matrices, slightly more runs meet Criteria #1.

Table 4.4 reveals that only a limited number of systems met Criteria #2. So few, in fact, that little information regarding trends in the performance of the method can be ascertained.

Criteria #3 shows the systems for which the method has limited ability to accurately predict total system cost variance. Since so few systems met the second criteria, systems described by Criteria #3 are basically the reverse of those described by Criteria #1. The same trends presented in the previous discussion hold true and will not be reiterated.

The results of the comparison of the 54 systems to the second standard are shown in Table 4.5. Notice that the trends mentioned in the previous two paragraphs hold true. This consistency adds to the reliability of the conclusions. One noteworthy occurrence is the drastic increase in the number of systems that meet Criteria #1 for Matrices 3 and 6. A lowering of the standard tripled the number of systems that met the first criteria.

Table 4.5

Internal Validity Result Matrix

Standard: 50-40-30

MATRIX 1

| n=5  |      | p   |     |     |
|------|------|-----|-----|-----|
| e=.2 |      | 1.0 | .75 | .50 |
|      | .500 | 1*  | 2*  | 3*  |
| m    | .707 | 4** | 5*  | 6*  |
|      | .866 | 7*  | 8*  | 9*  |

MATRIX 2

| n=5  |      | p   |     |     |
|------|------|-----|-----|-----|
| e=.1 |      | 1.0 | .75 | .50 |
|      | .500 | 10* | 11* | 12* |
| m    | .707 | 13* | 14* | 15* |
|      | .866 | 16* | 17* | 18* |

MATRIX 3

| n=50 |      | p   |     |     |
|------|------|-----|-----|-----|
| e=.2 |      | 1.0 | .75 | .50 |
|      | .500 | 19  | 20* | 21* |
| m    | .707 | 22  | 23* | 24* |
|      | .866 | 25  | 26* | 27* |

MATRIX 4

| n=50 |      | p   |     |     |
|------|------|-----|-----|-----|
| e=.1 |      | 1.0 | .75 | .50 |
|      | .500 | 28  | 29* | 30* |
| m    | .707 | 31* | 32* | 33* |
|      | .866 | 34* | 35* | 36* |

MATRIX 5

| n=100 |      | p   |     |      |
|-------|------|-----|-----|------|
| e=.2  |      | 1.0 | .75 | .50  |
|       | .500 | 37  | 38  | 39   |
| m     | .707 | 40  | 41  | 42** |
|       | .866 | 43  | 44* | 45*  |

MATRIX 6

| n=100 |      | p   |     |     |
|-------|------|-----|-----|-----|
| e=.1  |      | 1.0 | .75 | .50 |
|       | .500 | 46  | 47* | 48* |
| m     | .707 | 49  | 50* | 51* |
|       | .866 | 52  | 53* | 54* |

\* meets Criteria #1

\*\* meets Criteria #2

note: no entry means the system meets criteria #3

In spite of the increase in the number of systems meeting Criteria #1 in Matrices 3 and 6, no systems meet the criteria for Column #1 in these matrices when the proportion of positive Rhos was 1.0. This reinforces the earlier point that the cost-risk assessment method has poor predictive capabilities when  $p=.1$ .

Consistent with Table 4.4, Table 4.5 has only two systems meeting Criteria #2. The minimal number of systems meeting this criteria is significant. Since so few systems meet this criteria of moderate predictive ability, one conclusion is that the method tends to have either very strong or very limited predictive capabilities. This is true even when the two standards used to define acceptable overlap were significantly different. This conclusion is overwhelmingly supported by the data.

In general, the cost-risk assessment method, incorporating component cost dependence, predicts total system cost variance with relatively good accuracy when the error in Rho squared is .1. It does not do as well when the error is .2. Values of 'e' greater than .2 would indicate that  $R^2$  values are mis-estimating more than 20% of the total system variation. To estimate total system cost variance when  $R^2$  error is greater than .2 would be accepting entirely too large an error into the methodology. When the percentage of positive covariance values approaches 1.0, the method consistently predicts poorly. However, systems with all positive cost dependencies are highly unlikely. In the researcher's

opinion, a much more likely scenario would have 50% to 75% positive cost dependencies. With this situation, the predictive capabilities of the cost-risk assessment method are much better. Another expected result is the effect of system size on the predictive capabilities of the method. As 'n' increases, the estimation error for  $R^2$  is compounded and estimates of total system cost variance are further distorted. The mode value influences total system cost variance in small amounts. The higher the value, the higher the error in the estimate of total system cost variance. Finally, the lack of system configurations that fell into the second criteria for both standards indicates that there are clearly situations in which the method has strong predictive abilities and situations in which the method has weak predictive capabilities. This result enhances the value of the method because it defines the situations where the method can be used with confidence. The pronounced division in the number of systems meeting Criterion #1 and #2 may be caused by the rather 'crude' incrementing of the model parameters chosen for the sensitivity analysis. Modelling smaller incremental changes in these parameters may identify more situations with moderate predictive capability. It is interesting to note that the method may even be usable in situations where it has poor predictive capabilities. As the proportion of positive covariance terms approaches 1.0, the method predicts total system cost variance with less accuracy. The results from the ratio of the

variances indicate that the incorporation of component dependency becomes most important when the proportion of positive component dependencies approaches 1.0. The method is needed the most when it is least effective. However, even though the methods predictive abilities are not at their best, the method is still accounting for an increase in the total system cost variance that is not accounted for when independence is assumed.

## V. Conclusions and Recommendations

### Conclusions

The results from this research indicate that component cost dependency should be an important consideration in the cost-risk assessment process. The simulation revealed that for the majority of the system configurations, component dependency caused the total system cost variance to significantly deviate from its value under conditions of component independence. This finding indicates that weapon system acquisitions that assume component independence are likely to significantly misestimate the total system cost variance. The impact is the potential misallocation of scarce resources.

There were several trends that became evident when comparing dependence against independence using the cost-risk assessment method developed in this research. The proportion of the positive cost dependencies in a system clearly had the strongest influence over the difference between the dependent and independent system configurations. The greater the proportion of positive dependencies in the system, the greater the difference between the total system cost variances. As the strength of the cost dependencies was increased, the difference between the independent and dependent system variances increased. However, the increase was small relative to that increase which occurred when the

proportion of positive cost dependencies was increased. Changes in the size of the system did not appear to affect the ratio of the dependent and independent variances. However, the researchers believe this result is due to the limiting assumption of sequential component dependencies. As this restriction is relaxed, the number of component dependency pairings increases and could significantly affect the ratio of the variances. Sensitivity analysis was performed on the method to evaluate its ability to predict total system cost variance under conditions of Rho squared estimation error. Results show that the method predicts total system cost variance fairly accurately when  $R^2$  estimation error was limited to .1. As the  $R^2$  estimation error grew to .2, the method did not predict as well. The researchers consider a .1 error in estimating  $R^2$  to be very good, yet even this small amount of error does not guarantee prediction of the total system cost variance. When the number of components in the system or the proportion of the positive cost dependencies is large, the predictive ability of the cost-risk assessment method is not very accurate. However, these inaccuracies may be tolerable when the consequence of ignoring component dependence is considered. The researchers found that those situations where the variance was difficult to predict were the situations with the greatest need to incorporate dependence. The potential impact of each error would have to be weighed.

### Limitations

The research was limited in several ways. Although subjective assessments of component dependence will always include some degree of error, the technique used to quantify these assessments will introduce additional error. This is particularly true for the 'descriptive category' technique described in Chapter 3. The analyst has wide latitude in assigning Rho values to each category.

The simulation only tested a limited number of system configurations. Many scenarios that occur in the real world were left out. In particular, wider ranges and more parameter settings are needed to test the effects of negative component dependence, a larger range of rho values, and the more system sizes.

The manner in which the Rho values were generated is also a weakness in the research. Both positive and negative Rho values were generated from the same distribution. This assumes that the magnitudes of both the positive and negative Rho values have an equal likelihood of occurrence. In a real system, this situation is unlikely. Rather, strong positive relationships may be more likely to be accompanied with weak negative ones in the system.

### Recommendations

The authors feel that further research should be conducted with this cost-risk assessment methodology. The following areas are recommended:

1. Sensitivity analysis should be performed to examine the scenarios that were not examined here. A clearer identification of those situations with moderate prediction capability is needed.

2. Better techniques to solicit and convert subjective assessments into measures of dependency would improve the methodology. The use of conditional probabilities is one possible approach to consider.

3. Extension of this methodology should be applied to a WBS hierarchy to compare the trends which were discussed in this thesis.

## Appendix A: Calculation of Sample Size

Banks and Carson describe a procedure for determining the required number of simulation repetitions. A two-sided confidence interval for the mean of a distribution,  $\bar{x}$ , based on the Students t distribution is given by:

$$\bar{x} \pm [(t) (s / r^{\frac{1}{2}})] \quad (A.1)$$

where

t = critical value for t distribution  
s = sample standard deviation of x  
r = number of simulation repetitions

The precision of the confidence interval is specified so that it estimates the true mean within a tolerable error,  $\pm \epsilon$ , and with a desired level of confidence. Therefore, from Eq (A.1)

$$\epsilon \geq (t) (s / r^{\frac{1}{2}}) \quad (A.2)$$

The number of repetitions required to achieve an estimate of the mean within  $\pm \epsilon$  accuracy is determined by choosing an initial number of repetitions. The required number of repetitions is then solved by manipulating Eq (A.2) as follows:

$$\epsilon \geq (t) (s / r^{\frac{1}{2}}) \quad (A.2)$$

$$r^{\frac{1}{2}} \geq (t) (s / \epsilon) \quad (A.3)$$

$$r \geq [(t) (s / \epsilon)]^2 \quad (A.4)$$

The number of repetitions is calculated using the standard deviation from the initial sample, the critical t value, and the desired accuracy (1:427). Generally, a few iterations of Eq (A.4) are required in order to adjust the t value as the degrees of freedom change with the number of repetitions that is calculated (1:426-427).

The authors selected 50 initial repetitions for the five component system and 100 for the fifty and one hundred component systems. A 95% confidence level seemed reasonable and the amount of tolerable error was subjectively established at 50, roughly half the sample standard deviation for the five component system ( $s=110$ ). The mode for the triangular distribution, the proportion of positive rhos, and the rho squared estimation error were set to:  $m=.707$  ,  $p=.75$  , and  $e=.1$  . The 'normal' case was used as the basis for the calculations.

For the 5 component system, solving Eq (A.4) revealed that 20 repetitions were sufficient.

$$\begin{aligned} r &\geq [(t) (s / \epsilon)]^2 & (A.4) \\ r &\geq [(2.02) (110 / 50)]^2 \\ r &\geq 20 \end{aligned}$$

However, 50 repetitions were selected for the 5 component system in order to provide a smoother histogram. From Eq

(A.2), the error for the 5 component system is reduced from 50 to 31 when  $r=50$  . The sample standard deviations for the 50 and 100 component systems were 373 and 545, respectively. Applying the above procedure, the calculated sample sizes were 213 and 456 for  $n=50$  and  $n=100$  , respectively.

As discussed in Banks and Carson, the model is run with this number of repetitions and adjustments are made for the new sample standard deviation (1:427). The results of these calculations yielded  $r=229$  and  $r=393$  . These values were rounded. The number of repetitions used in this research is shown in Table A.1.

| -----<br>Table A.1<br>-----                |                                                 |
|--------------------------------------------|-------------------------------------------------|
| Simulation Replications                    |                                                 |
| <u>number of<br/>system<br/>components</u> | <u>number of<br/>simulation<br/>repetitions</u> |
| 5                                          | 50                                              |
| 50                                         | 230                                             |
| 100                                        | 400                                             |
| -----                                      |                                                 |

## Appendix B: Simulation Program

The following section of the Fortran code declares these real and integer variables and arrays:

| <u>ARRAY</u> | <u>PURPOSE</u>                                                                              |
|--------------|---------------------------------------------------------------------------------------------|
| var          | Stores component variances                                                                  |
| sign         | Stores random numbers (uniformly distributed 0-1) used to determine the sign of rho values  |
| numb         | Stores random numbers (uniformly distributed 0-1) used to calculate magnitude of rho values |
| rl           | Stores low Rho for component pairs                                                          |
| rn           | Stores normal Rho for component pairs                                                       |
| rh           | Stores high Rho for component pairs                                                         |
| covl         | Stores covariance computed with low Rho                                                     |
| covn         | Stores covariance computed with normal Rho                                                  |
| covh         | Stores covariance computed with high Rho                                                    |
| seeds        | Stores random numbers (uniformly distributed 0-1) to be used as random number stream seeds  |

| <u>VARIABLE</u> | <u>IDENTITY</u>                   |
|-----------------|-----------------------------------|
| covsl           | Sum of low covariances            |
| covsn           | Sum of normal covariances         |
| covsh           | Sum of high covariances           |
| vars            | Sum of component variances        |
| tsvl            | Total system variance-low         |
| tsvn            | Total system variance-normal      |
| tsvh            | Total system variance-high        |
| ix              | Initial random number stream seed |

|      |                                                                |
|------|----------------------------------------------------------------|
| iy   | Dummy variable for random number generation                    |
| yfl  | Random number generated by subroutine                          |
| ayfl | Dummy variable used for arithmetic operations on random number |
| m    | Mode of triangular distribution of rho values                  |
| e    | Rho estimation error                                           |
| p    | Proportion of positive rho values                              |
| n    | Number of system components                                    |
| r    | Number of simulation repetitions (Appendix A)                  |
| rnsq | Rho-normal squared                                             |
| i    | Counter                                                        |
| k    | Counter                                                        |

```

-----
c      program l.f
       real var(100),sign(99),numb(99),r1(99),rn(99),rh(99),
       *covl(99),covn(99),covh(99),seeds(400),covs1,covsn,
       *covsh,vars,yfl,tsvl,tsvn,tsvh,m,ayfl,rnsq,e,p
       integer ix,iy,n,i,k,r
-----

```

The following segment opens a file where the output of the simulation is stored and sets the system parameters as described in Chapter 3. Files out1-out54 were used.

```

-----
       open (6,file='out37')
       rewind 6
       p=1.0
       e=.2
       n=100
       m=.5
       r=400
-----

```

This section calls the random number generator (subroutine

RANDU) and initializes the random number stream seed.

```
-----  
      iy=0  
      ix=83647  
      yfl=0.0  
      call randu(ix,iy,yfl)  
-----
```

This loop calls the RANDU subroutine to generate random numbers that will be converted to a different 5 digit integer random number stream seed for each simulation repetition. This is to ensure that the simulation results are not autocorrelated (1:391).

```
-----  
      do 20 i=1,r  
        ix=iy  
        call randu(ix,iy,yfl)  
        ayfl=int(yfl*100000)  
        seeds(i)=ayfl  
20    continue  
-----
```

This loop calls the subroutine to generate random numbers that are used for component variance values (0-100). These variances are held constant for all iterations of a given system and are identical for all simulations of equal component size.

```
-----  
      do 30 i=1,n  
        ix=iy  
        call randu(ix,iy,yfl)  
        ayfl=yfl*100  
        var(i)=ayfl  
30    continue  
-----
```

This section begins the loop for iterations of the defined system and initializes the sum of variances, covariances, and total system variance to 0.

```
-----  
do 1000 k=1,r  
  vars=0.0  
  covsl=0.0  
  covsn=0.0  
  covsh=0.0  
  tsvl=0.0  
  tsvn=0.0  
  tsvh=0.0  
-----
```

This segment initializes the random number stream to a new value for each repetition.

```
-----  
iy=0  
ix=seeds(k)  
yfl=0.0  
call randu(ix,iy,yfl)  
-----
```

This loop loads an array with random numbers for each component pair. These numbers are also non-autocorrelated and will determine which component pairs have negative correlation.

```
-----  
do 40 i=1,(n-1)  
  ix=iy  
  call randu(ix,iy,yfl)  
  sign(i)=yfl  
40  continue  
-----
```

The following loop loads an array with random numbers for

each component pair. These numbers will be used to calculate non-autocorrelated Rho values based on a triangular distribution.

```
-----
      do 50 i=1,(n-1)
          ix=iy
          call randu(ix,iy,yf1)
          numb(i)=yf1
50      continue
-----
```

This section transforms the random numbers in array 'numb' into a Rho value for each component pair. Banks and Carson use the cumulative distribution function (c.d.f.) to transform the random number into a random variate of the triangular distribution. The c.d.f. for a triangular distribution on the interval (0,1) is:

$$F(x) = \begin{cases} 0, & x \leq 0 \\ x^2 / m, & 0 < x \leq m \\ [1 - (1-x)^2] / (1-m), & m < x \leq 1 \\ 1, & x > 1 \end{cases} \quad (B.1)$$

where

m = mode of triangular distribution  
x = rho value on the distribution

Eq (B.1) is then set equal to the random number, 'numb' for each interval of the random variate. For  $0 \leq x \leq m$ :

$$\text{numb} = x^2 / m \quad (B.2)$$

For  $m < x \leq 1$ :

$$\text{numb} = [1 - (1-x)^2] / (1-m) \quad (\text{B.3})$$

Therefore, Rho values ( $x$ ) in the interval  $0 \leq x \leq m$  implies that  $0 \leq \text{numb} \leq m$ . In this case, the Rho value for random numbers between 0 and  $m$  are calculated by rearranging Eq (B.2) as follows:

$$x^2 = (m) (\text{numb}) \quad (\text{B.4})$$

$$x = [(m) (\text{numb})]^{\frac{1}{2}} \quad (\text{B.5})$$

Rho values ( $x$ ) in the interval  $m < x \leq 1$  implies that  $m < \text{numb} \leq 1$ . The Rho value for random numbers between  $m$  and 1 are calculated from Eq (B.3) as follows:

$$(1-x)^2 / (1-m) = 1 - \text{numb} \quad (\text{B.6})$$

$$(1-x)^2 = (1-m) (1-\text{numb}) \quad (\text{B.7})$$

$$(1-x) = [(1-m) (1-\text{numb})]^{\frac{1}{2}} \quad (\text{B.8})$$

$$-x = -1 + [(1-m) (1-\text{numb})]^{\frac{1}{2}} \quad (\text{B.9})$$

$$x = 1 - [(1-m) (1-\text{numb})]^{\frac{1}{2}} \quad (\text{B.10})$$

To summarize the transformation:

$$x = \begin{cases} [(m) (\text{numb})]^{\frac{1}{2}}, & 0 \leq \text{numb} \leq m \\ 1 - [(1-m) (1-\text{numb})]^{\frac{1}{2}}, & m < \text{numb} \leq 1 \end{cases} \quad (\text{B.11})$$

(1:158, 299-300)

```

-----
do 60 i=1,(n-1)
  if(numb(i) .ge. 0.0 .and. numb(i) .le. m) then
    rn(i)=sqrt(m*numb(i))
  else
    rn(i)=1.0-sqrt((1.0-m)*(1.0-numb(i)))
60  continue
-----

```

This loop changes the Rho to a negative value for component pairs when 'sign' random number is greater than the identified proportion of positive Rhos.

```

-----
do 70 i=1,(n-1)
  if (sign(i) .gt. p) then
    rn(i)=-rn(i)
  end if
70  continue
-----

```

The next loop checks the Rho values and assigns upper and lower Rho limits based on the sign of rho and the amount of Rho squared estimation error. The Rho limit which produces the lower total system variance is assigned to array 'rl', the other limit is assigned to array 'rh'. Rho limits that are outside the interval (0,1) are truncated to the appropriate limit, 0 or 1. An example of this procedure is given in Chapter 3.

```

-----
do 80 i=1,(n-1)
  if (rn(i) .ge. 0.0) then
    rnsq=rn(i)**2
    if (0.0 .gt. (rnsq-e/2)) then
      rl(i)=0.0
      rh(i)=sqrt(rnsq+e/2)
    else if ((rnsq+e/2) .gt. 1.0) then
      rl(i)=sqrt(rnsq-e/2)
      rh(i)=1.0
  end if
80  continue
-----

```

```

        else
            r1(i)=sqrt(rnsq-e/2)
            rh(i)=sqrt(rnsq+e/2)
        end if
    else if (rn(i) .lt. 0.0) then
        rnsq=rn(i)**2
        if (0.0 .gt. (rnsq-e/2)) then
            rh(i)=0.0
            r1(i)=-sqrt(rnsq+e/2)
        else if ((rnsq+e/2) .gt. 1.0) then
            rh(i)=-sqrt(rnsq-e/2)
            r1(i)=-1.0
        else
            rh(i)=-sqrt(rnsq-e/2)
            r1(i)=-sqrt(rnsq+e/2)
        end if
    end if
80    continue
-----

```

The following section uses the normal, low, and high rho values for each component pair and their associated variances to calculate the normal, low, and high covariance values.

```

-----
do 90 i=1,(n-1)
    covl(i)=r1(i)*sqrt(var(i)*var(i+1))
    covn(i)=rn(i)*sqrt(var(i)*var(i+1))
    covh(i)=rh(i)*sqrt(var(i)*var(i+1))
90    continue
-----

```

This loop sums the variances for all system components.

```

-----
do 100 i=1,n
    vars=vars+var(i)
100    continue
-----

```

This loop sums the normal, low, and high covariances for all component pairs.

```

-----
      do 110 i=1,(n-1)
          covsl=covsl+covl(i)
          covsn=covsn+covn(i)
          covsh=covsh+covh(i)
110 continue
-----

```

This segment calculates the normal, low, and high total system variance. Covariance sums are multiplied by 2 as discussed in Chapter 3. The output is written to the file identified in the OPEN statement at the beginning of the program. Program execution loops back for another repetition of the same system until r repetitions have been performed.

```

-----
      tsvl=vars+2*covsl
      tsvn=vars+2*covsn
      tsvh=vars+2*covsh

      write(6,7)tsvl,tsvn,tsvh
7      format(3(f6.0,x))

1000 continue
-----

```

After the final repetition is complete, the output file is closed and program execution halts.

```

-----
      close (6)
      end
-----

```

The RANDU subroutine generates all random numbers required by the simulation.

```
-----  
      subroutine randu(ix,iy,yfl)  
      iy=ix*65539  
      if (iy)5,6,6  
5      iy=iy+2147483647+1  
6      yfl=iy  
      yfl=yfl*.4656613e-9  
      return  
      end  
-----
```

## Appendix C: BMDP Programs

The University of California at Los Angeles (UCLA) BMDP statistical package was used to provide the histograms and the sorting procedure that aided the data analysis (6:43, 74-78, 112-113, 124-132). The following programs were used to perform their respective functions.

### Program 1: Histograms

The variable names tsvl, tsvn, and tsvh correspond to those used in the simulation program discussed in Appendix B.

```
-----  
/problem          title is 'run54'.  
-----
```

The problem paragraph states the title of the BMDP execution program. In this case the name of the program is run54.

```
-----  
/input            variables are 3.  
                  format is '(3(f6.0,x))'.  
-----
```

This portion of the program, the input paragraph, states the number and format of variables to be read in as data.

```
-----  
/variable          names are tsvl,tsvn,tsvh.  
                  blanks are zero.  
-----
```

The variable paragraph names the variables so that they

may be identified in the output. The second line of code makes the package read all blank spaces in the data as zeroes.

```
-----  
/group      cutpoints (1) = 2300 to 5800 by 175.  
            cutpoints (2) = 2650 to 6150 by 175.  
            cutpoints (3) = 3175 to 6675 by 175.  
-----
```

The group paragraph sets the intervals for the histograms. (1) represents tsv1, (2) represents tsvn, and (3) represents tsvh. The high and low values were determined by the sort program to be discussed below. A value consistent within each run is used to specify the width of each interval. In the case of run54, 175 is the interval width.

```
-----  
/plot      type is hist.  
           scale is 0,3.  
-----
```

The plot paragraph specifies that a histogram will be plotted. The second line indicates that zero is the low value on the histograms and that each 'X' on the histogram represents three data points.

```
-----  
/end  
-----
```

This ends the program. After this statement, the data is listed in the format described in the input paragraph.

## Program 2: Sorting

This program is the same as the histogram program with some changes. The problem and variable paragraphs remain the same. The following code is added to the input paragraph.

```
-----  
/input          variables are 3.  
                format is '(3(f6.0,x))'.  
                sort is tsvn, tsv1, tsvh.  
-----
```

The sort statement has the tsvn variable name first to give it precedence in the sort since it is the critical data column.

Instead of a plot paragraph, a print paragraph was used to display the sorted data.

```
-----  
/print          data.  
                order.  
-----
```

## Appendix D: Histograms for RUN1-RUN54

This Appendix contains the BMDP-generated histograms for RUN1-RUN54. The histograms show the 'low', 'normal' and 'high' distributions of total system cost variance for each RUN number.

run1

# HISTOGRAM OF VARIABLE 2 tsyn

SYMBOL COUNT MEAN ST.DEV.  
X 50 576.640 40.447  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *490.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *500.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *510.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *520.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *530.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7         |
| *540.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12        |
| *550.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14        |
| *560.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18        |
| *570.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22        |
| *580.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *590.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *600.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *610.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *620.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *630.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *640.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *650.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *660.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *670.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *680.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50        |

```

run1
HISTOGRAM OF VARIABLE 1 tsv1
EACH SYMBOL REPRESENTS 50
MEAN 507.700 ST. DEV. 52.554
OBSERVATIONS 1
INTERVAL NAME 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80
+-----+
*390.000 + XX
*400.000 + XX
*410.000 + X
*420.000 +
*430.000 +
*440.000 + X
*450.000 + X
*460.000 + XXXX
*470.000 + XXXX
*480.000 + XXX
*490.000 + XXXX
*500.000 + XXXX
*510.000 + XXX
*520.000 + XXXX
*530.000 + XXXX
*540.000 + XXXX
*550.000 + XXX
*560.000 + XXXX
*570.000 + XXX
*580.000 + X
*590.000 + X
*600.000 + X
*610.000 + X
*620.000 +
*630.000 +
*640.000 + X
*LAST +
+-----+
FREQUENCY
INT. CUM.
0 2
1 3
0 3
0 3
1 4
1 5
1 9
4 13
3 16
4 20
4 24
0 24
3 27
5 32
4 36
3 39
3 42
4 46
1 47
1 48
0 48
1 49
0 49
0 49
1 50
0 50

```

run1

| HISTOGRAM OF VARIABLE |  |  | 3 tsyh                 |  | SYMBOL COUNT |  | MEAN    |  | ST. DEV. |  |
|-----------------------|--|--|------------------------|--|--------------|--|---------|--|----------|--|
| INTERVAL              |  |  | EACH SYMBOL REPRESENTS |  | X            |  | 631.888 |  | 32.688   |  |
| NAME                  |  |  | 5                      |  | 10           |  | 15      |  | 20       |  |
|                       |  |  | 25                     |  | 30           |  | 35      |  | 40       |  |
|                       |  |  | 45                     |  | 50           |  | 55      |  | 60       |  |
|                       |  |  | 65                     |  | 70           |  | 75      |  | 80       |  |
|                       |  |  | 85                     |  | 90           |  | 95      |  | 100      |  |
|                       |  |  | 105                    |  | 110          |  | 115     |  | 120      |  |
|                       |  |  | 125                    |  | 130          |  | 135     |  | 140      |  |
|                       |  |  | 145                    |  | 150          |  | 155     |  | 160      |  |
|                       |  |  | 165                    |  | 170          |  | 175     |  | 180      |  |
|                       |  |  | 185                    |  | 190          |  | 195     |  | 200      |  |
|                       |  |  | 205                    |  | 210          |  | 215     |  | 220      |  |
|                       |  |  | 225                    |  | 230          |  | 235     |  | 240      |  |
|                       |  |  | 245                    |  | 250          |  | 255     |  | 260      |  |
|                       |  |  | 265                    |  | 270          |  | 275     |  | 280      |  |
|                       |  |  | 285                    |  | 290          |  | 295     |  | 300      |  |
|                       |  |  | 305                    |  | 310          |  | 315     |  | 320      |  |
|                       |  |  | 325                    |  | 330          |  | 335     |  | 340      |  |
|                       |  |  | 345                    |  | 350          |  | 355     |  | 360      |  |
|                       |  |  | 365                    |  | 370          |  | 375     |  | 380      |  |
|                       |  |  | 385                    |  | 390          |  | 395     |  | 400      |  |
|                       |  |  | 405                    |  | 410          |  | 415     |  | 420      |  |
|                       |  |  | 425                    |  | 430          |  | 435     |  | 440      |  |
|                       |  |  | 445                    |  | 450          |  | 455     |  | 460      |  |
|                       |  |  | 465                    |  | 470          |  | 475     |  | 480      |  |
|                       |  |  | 485                    |  | 490          |  | 495     |  | 500      |  |
|                       |  |  | 505                    |  | 510          |  | 515     |  | 520      |  |
|                       |  |  | 525                    |  | 530          |  | 535     |  | 540      |  |
|                       |  |  | 545                    |  | 550          |  | 555     |  | 560      |  |
|                       |  |  | 565                    |  | 570          |  | 575     |  | 580      |  |
|                       |  |  | 585                    |  | 590          |  | 595     |  | 600      |  |
|                       |  |  | 605                    |  | 610          |  | 615     |  | 620      |  |
|                       |  |  | 625                    |  | 630          |  | 635     |  | 640      |  |
|                       |  |  | 645                    |  | 650          |  | 655     |  | 660      |  |
|                       |  |  | 665                    |  | 670          |  | 675     |  | 680      |  |
|                       |  |  | 685                    |  | 690          |  | 695     |  | 700      |  |
|                       |  |  | 705                    |  | 710          |  | 715     |  | 720      |  |
|                       |  |  | 725                    |  | 730          |  | 735     |  | 740      |  |
|                       |  |  | 745                    |  | 750          |  | 755     |  | 760      |  |
|                       |  |  | 765                    |  | 770          |  | 775     |  | 780      |  |
|                       |  |  | 785                    |  | 790          |  | 795     |  | 800      |  |
|                       |  |  | 805                    |  | 810          |  | 815     |  | 820      |  |
|                       |  |  | 825                    |  | 830          |  | 835     |  | 840      |  |
|                       |  |  | 845                    |  | 850          |  | 855     |  | 860      |  |
|                       |  |  | 865                    |  | 870          |  | 875     |  | 880      |  |
|                       |  |  | 885                    |  | 890          |  | 895     |  | 900      |  |
|                       |  |  | 905                    |  | 910          |  | 915     |  | 920      |  |
|                       |  |  | 925                    |  | 930          |  | 935     |  | 940      |  |
|                       |  |  | 945                    |  | 950          |  | 955     |  | 960      |  |
|                       |  |  | 965                    |  | 970          |  | 975     |  | 980      |  |
|                       |  |  | 985                    |  | 990          |  | 995     |  | 1000     |  |
|                       |  |  | 1005                   |  | 1010         |  | 1015    |  | 1020     |  |
|                       |  |  | 1025                   |  | 1030         |  | 1035    |  | 1040     |  |
|                       |  |  | 1045                   |  | 1050         |  | 1055    |  | 1060     |  |
|                       |  |  | 1065                   |  | 1070         |  | 1075    |  | 1080     |  |
|                       |  |  | 1085                   |  | 1090         |  | 1095    |  | 1100     |  |
|                       |  |  | 1105                   |  | 1110         |  | 1115    |  | 1120     |  |
|                       |  |  | 1125                   |  | 1130         |  | 1135    |  | 1140     |  |
|                       |  |  | 1145                   |  | 1150         |  | 1155    |  | 1160     |  |
|                       |  |  | 1165                   |  | 1170         |  | 1175    |  | 1180     |  |
|                       |  |  | 1185                   |  | 1190         |  | 1195    |  | 1200     |  |
|                       |  |  | 1205                   |  | 1210         |  | 1215    |  | 1220     |  |
|                       |  |  | 1225                   |  | 1230         |  | 1235    |  | 1240     |  |
|                       |  |  | 1245                   |  | 1250         |  | 1255    |  | 1260     |  |
|                       |  |  | 1265                   |  | 1270         |  | 1275    |  | 1280     |  |
|                       |  |  | 1285                   |  | 1290         |  | 1295    |  | 1300     |  |
|                       |  |  | 1305                   |  | 1310         |  | 1315    |  | 1320     |  |
|                       |  |  | 1325                   |  | 1330         |  | 1335    |  | 1340     |  |
|                       |  |  | 1345                   |  | 1350         |  | 1355    |  | 1360     |  |
|                       |  |  | 1365                   |  | 1370         |  | 1375    |  | 1380     |  |
|                       |  |  | 1385                   |  | 1390         |  | 1395    |  | 1400     |  |
|                       |  |  | 1405                   |  | 1410         |  | 1415    |  | 1420     |  |
|                       |  |  | 1425                   |  | 1430         |  | 1435    |  | 1440     |  |
|                       |  |  | 1445                   |  | 1450         |  | 1455    |  | 1460     |  |
|                       |  |  | 1465                   |  | 1470         |  | 1475    |  | 1480     |  |
|                       |  |  | 1485                   |  | 1490         |  | 1495    |  | 1500     |  |
|                       |  |  | 1505                   |  | 1510         |  | 1515    |  | 1520     |  |
|                       |  |  | 1525                   |  | 1530         |  | 1535    |  | 1540     |  |
|                       |  |  | 1545                   |  | 1550         |  | 1555    |  | 1560     |  |
|                       |  |  | 1565                   |  | 1570         |  | 1575    |  | 1580     |  |
|                       |  |  | 1585                   |  | 1590         |  | 1595    |  | 1600     |  |
|                       |  |  | 1605                   |  | 1610         |  | 1615    |  | 1620     |  |
|                       |  |  | 1625                   |  | 1630         |  | 1635    |  | 1640     |  |
|                       |  |  | 1645                   |  | 1650         |  | 1655    |  | 1660     |  |
|                       |  |  | 1665                   |  | 1670         |  | 1675    |  | 1680     |  |
|                       |  |  | 1685                   |  | 1690         |  | 1695    |  | 1700     |  |

**run2**

### HISTOGRAM OF VARIABLE

1551

[illegible]

MEAN 488.820 ST. DEV. 116.498

# 1 OBSERVATIONS

**EACH SYMBOL REPRESENTS**

**FREQUENCY  
INT. CUM.**

[illegible]

|    |         |           |
|----|---------|-----------|
| 1  | 148.888 | +X        |
| 2  | 168.888 | +X        |
| 3  | 188.888 | +         |
| 4  | 208.888 | +X        |
| 5  | 228.888 | +X        |
| 6  | 248.888 | +X        |
| 7  | 268.888 | +X        |
| 8  | 288.888 | +X        |
| 9  | 308.888 | +X        |
| 10 | 328.888 | +X        |
| 11 | 348.888 | +X        |
| 12 | 368.888 | +XXX      |
| 13 | 388.888 | +XX       |
| 14 | 408.888 | +XXXXX    |
| 15 | 428.888 | +XXXXXXXX |
| 16 | 448.888 | +XX       |
| 17 | 468.888 | +XX       |
| 18 | 488.888 | +XXXXX    |
| 19 | 508.888 | +XXXXX    |
| 20 | 528.888 | +XXX      |
| 21 | 548.888 | +XXXXX    |
| 22 | 568.888 | +XX       |
| 23 | 588.888 | +XX       |
| 24 | 608.888 | +         |

run2

HISTOGRAM OF VARIABLE 2 tavn      SYMBOL COUNT      MEAN      ST. DEV.  
 EACH SYMBOL REPRESENTS X 52 464.984 136.586  
 OBSERVATIONS

| INTERVAL        | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|-----------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| 200.000 +XX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| 220.000 +X      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| 240.000 +       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| 260.000 +X      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| 280.000 +       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| 300.000 +XX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| 320.000 +       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| 340.000 +XX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| 360.000 +X      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| 380.000 +X      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| 400.000 +X      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| 420.000 +X      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| 440.000 +XXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| 460.000 +X      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| 480.000 +XXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| 500.000 +XX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7         |
| 520.000 +XXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| 540.000 +XXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| 560.000 +XXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| 580.000 +XX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| 600.000 +XXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| 620.000 +XXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| 640.000 +XX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| LAST            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |

run2

# HISTOGRAM OF VARIABLE 3 tswh

MEAN 518.789  
ST. DEV. 141.184  
1 OBSERVATIONS

SYMBOL COUNT  
X 52  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *260.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *280.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *300.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *320.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *340.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *360.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *380.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *400.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *420.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *440.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *460.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11 |
| *480.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *500.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17 |
| *520.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *540.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19 |
| *560.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24 |
| *580.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *600.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 29 |
| *620.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *640.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 33 |
| *660.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *680.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 35 |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6  |
|          | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 41 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 45 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 52 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |

```

run3
HISTOGRAM OF VARIABLE 1 tsv1      MEAN      ST.DEV.
                                283.448  137.538
                                50
                                1 OBSERVATIONS
EACH SYMBOL REPRESENTS

```

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 00.0000  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 25.0000  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 50.0000  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 75.0000  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 100.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 125.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 150.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 175.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 200.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 225.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 250.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 275.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 300.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 325.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 350.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 375.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 400.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 425.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 450.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 475.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 500.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 525.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 550.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 575.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| LAST     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

```

FREQUENCY
INT. CUM.
0 0
1 1
1 1
0 2
2 4
1 5
1 6
5 11
5 16
2 18
7 25
3 28
2 30
2 32
3 35
2 37
3 40
2 42
1 43
0 43
2 45
2 47
2 49
1 50
0 50

```

run3

[illegible]

```

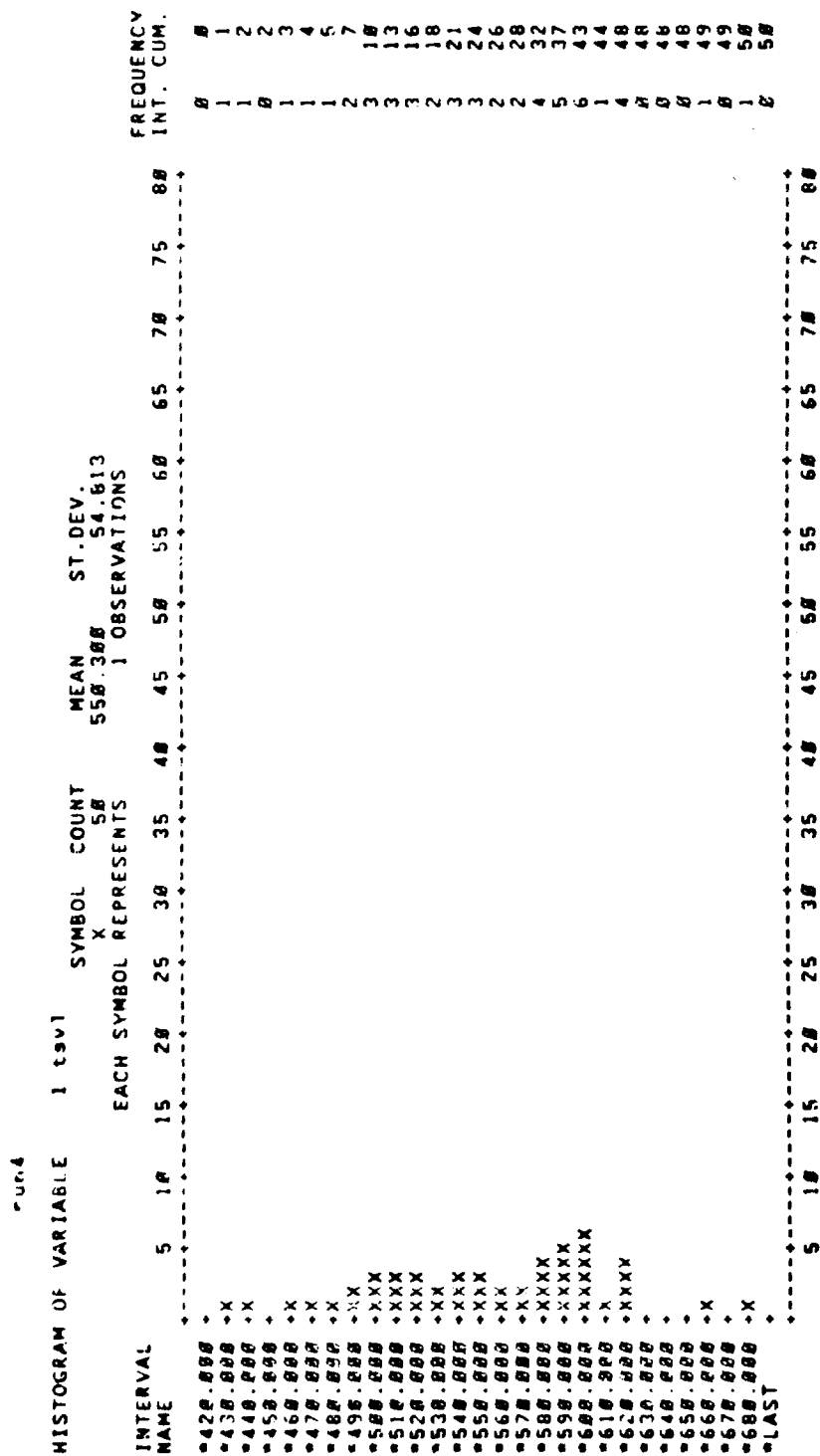
run3
HISTOGRAM OF VARIABLE 3 tsyh          MEAN      ST. DEV.
                                406.660    133.084
                                50
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

INTERVAL      5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80
NAME
•100.000 •
•125.000 •X
•150.000 •X
•175.000 •
•200.000 •
•225.000 •XX
•250.000 •X
•275.000 •X
•300.000 •XX
•325.000 •XXXXX
•350.000 •XXXXXXX
•375.000 •XXXXX
•400.000 •XXXXX
•425.000 •
•450.000 •XX
•475.000 •XXX
•500.000 •XXXX
•525.000 •XXX
•550.000 •X
•575.000 •XX
•600.000 •
•625.000 •XX
•650.000 •XX
•675.000 •XX
•LAST

                                5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80
FREQUENCY
INT. CUM.
0  1  1  1  2  2  2  2  4  5  5  6  8  13  20  24  29  31  34  38  41  42  44  44  46  48  50  50

```

[illegible]



run4

HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST.DEV.  
X 50 659.940 34.775  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| *590.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *600.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *610.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *620.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *630.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *640.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 9  |
| *650.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12 |
| *660.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15 |
| *670.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21 |
| *680.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24 |
| *690.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 26 |
| *700.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 36 |
| *710.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 41 |
| *720.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *730.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *740.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *750.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48 |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 49 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |

[illegible]

run5

| HISTOGRAM OF VARIABLE |  | 2 tsyn                 |  | SYMBOL COUNT |  | MEAN    |  | ST.DEV. |  |
|-----------------------|--|------------------------|--|--------------|--|---------|--|---------|--|
| INTERVAL              |  | EACH SYMBOL REPRESENTS |  | X            |  | 503.360 |  | 115.089 |  |
| NAME                  |  | 5                      |  | 10           |  | 15      |  | 20      |  |
|                       |  | 25                     |  | 30           |  | 35      |  | 40      |  |
|                       |  | 45                     |  | 50           |  | 55      |  | 60      |  |
|                       |  | 65                     |  | 70           |  | 75      |  | 80      |  |
|                       |  | 85                     |  | 90           |  | 95      |  | 100     |  |
|                       |  | 105                    |  | 110          |  | 115     |  | 120     |  |
|                       |  | 125                    |  | 130          |  | 135     |  | 140     |  |
|                       |  | 145                    |  | 150          |  | 155     |  | 160     |  |
|                       |  | 165                    |  | 170          |  | 175     |  | 180     |  |
|                       |  | 185                    |  | 190          |  | 195     |  | 200     |  |
|                       |  | 205                    |  | 210          |  | 215     |  | 220     |  |
|                       |  | 225                    |  | 230          |  | 235     |  | 240     |  |
|                       |  | 245                    |  | 250          |  | 255     |  | 260     |  |
|                       |  | 265                    |  | 270          |  | 275     |  | 280     |  |
|                       |  | 285                    |  | 290          |  | 295     |  | 300     |  |
|                       |  | 305                    |  | 310          |  | 315     |  | 320     |  |
|                       |  | 325                    |  | 330          |  | 335     |  | 340     |  |
|                       |  | 345                    |  | 350          |  | 355     |  | 360     |  |
|                       |  | 365                    |  | 370          |  | 375     |  | 380     |  |
|                       |  | 385                    |  | 390          |  | 395     |  | 400     |  |
|                       |  | 405                    |  | 410          |  | 415     |  | 420     |  |
|                       |  | 425                    |  | 430          |  | 435     |  | 440     |  |
|                       |  | 445                    |  | 450          |  | 455     |  | 460     |  |
|                       |  | 465                    |  | 470          |  | 475     |  | 480     |  |
|                       |  | 485                    |  | 490          |  | 495     |  | 500     |  |
|                       |  | 505                    |  | 510          |  | 515     |  | 520     |  |
|                       |  | 525                    |  | 530          |  | 535     |  | 540     |  |
|                       |  | 545                    |  | 550          |  | 555     |  | 560     |  |
|                       |  | 565                    |  | 570          |  | 575     |  | 580     |  |
|                       |  | 585                    |  | 590          |  | 595     |  | 600     |  |
|                       |  | 605                    |  | 610          |  | 615     |  | 620     |  |
|                       |  | 625                    |  | 630          |  | 635     |  | 640     |  |
|                       |  | 645                    |  | 650          |  | 655     |  | 660     |  |
|                       |  | 665                    |  | 670          |  | 675     |  | 680     |  |
|                       |  | 685                    |  | 690          |  | 695     |  | 700     |  |
|                       |  | 705                    |  | 710          |  | 715     |  | 720     |  |
|                       |  | 725                    |  | 730          |  | 735     |  | 740     |  |
|                       |  | 745                    |  | 750          |  | 755     |  | 760     |  |
|                       |  | 765                    |  | 770          |  | 775     |  | 780     |  |
|                       |  | 785                    |  | 790          |  | 795     |  | 800     |  |
|                       |  | 805                    |  | 810          |  | 815     |  | 820     |  |
|                       |  | 825                    |  | 830          |  | 835     |  | 840     |  |
|                       |  | 845                    |  | 850          |  | 855     |  | 860     |  |
|                       |  | 865                    |  | 870          |  | 875     |  | 880     |  |
|                       |  | 885                    |  | 890          |  | 895     |  | 900     |  |
|                       |  | 905                    |  | 910          |  | 915     |  | 920     |  |
|                       |  | 925                    |  | 930          |  | 935     |  | 940     |  |
|                       |  | 945                    |  | 950          |  | 955     |  | 960     |  |
|                       |  | 965                    |  | 970          |  | 975     |  | 980     |  |
|                       |  | 985                    |  | 990          |  | 995     |  | 1000    |  |
|                       |  | 1005                   |  | 1010         |  | 1015    |  | 1020    |  |
|                       |  | 1025                   |  | 1030         |  | 1035    |  | 1040    |  |
|                       |  | 1045                   |  | 1050         |  | 1055    |  | 1060    |  |
|                       |  | 1065                   |  | 1070         |  | 1075    |  | 1080    |  |
|                       |  | 1085                   |  | 1090         |  | 1095    |  | 1100    |  |
|                       |  | 1105                   |  | 1110         |  | 1115    |  | 1120    |  |
|                       |  | 1125                   |  | 1130         |  | 1135    |  | 1140    |  |
|                       |  | 1145                   |  | 1150         |  | 1155    |  | 1160    |  |
|                       |  | 1165                   |  | 1170         |  | 1175    |  | 1180    |  |
|                       |  | 1185                   |  | 1190         |  | 1195    |  | 1200    |  |
|                       |  | 1205                   |  | 1210         |  | 1215    |  | 1220    |  |
|                       |  | 1225                   |  | 1230         |  | 1235    |  | 1240    |  |
|                       |  | 1245                   |  | 1250         |  | 1255    |  | 1260    |  |
|                       |  | 1265                   |  | 1270         |  | 1275    |  | 1280    |  |
|                       |  | 1285                   |  | 1290         |  | 1295    |  | 1300    |  |
|                       |  | 1305                   |  | 1310         |  | 1315    |  | 1320    |  |
|                       |  | 1325                   |  | 1330         |  | 1335    |  | 1340    |  |
|                       |  | 1345                   |  | 1350         |  | 1355    |  | 1360    |  |
|                       |  | 1365                   |  | 1370         |  | 1375    |  | 1380    |  |
|                       |  | 1385                   |  | 1390         |  | 1395    |  | 1400    |  |
|                       |  | 1405                   |  | 1410         |  | 1415    |  | 1420    |  |
|                       |  | 1425                   |  | 1430         |  | 1435    |  | 1440    |  |
|                       |  | 1445                   |  | 1450         |  | 1455    |  | 1460    |  |
|                       |  | 1465                   |  | 1470         |  | 1475    |  | 1480    |  |
|                       |  | 1485                   |  | 1490         |  | 1495    |  | 1500    |  |
|                       |  | 1505                   |  | 1510         |  | 1515    |  | 1520    |  |
|                       |  | 1525                   |  | 1530         |  | 1535    |  | 1540    |  |
|                       |  | 1545                   |  | 1550         |  | 1555    |  | 1560    |  |
|                       |  | 1565                   |  | 1570         |  | 1575    |  | 1580    |  |
|                       |  | 1585                   |  | 1590         |  | 1595    |  | 1600    |  |
|                       |  | 1605                   |  | 1610         |  | 1615    |  | 1620    |  |
|                       |  | 1625                   |  | 1630         |  | 1635    |  | 1640    |  |
|                       |  | 1645                   |  | 1650         |  | 1655    |  | 1660    |  |
|                       |  | 1665                   |  | 1670         |  | 1675    |  | 1680    |  |
|                       |  | 1685                   |  | 1690         |  | 1695    |  | 1700    |  |
|                       |  | 1705                   |  | 1710         |  | 1715    |  | 1720    |  |
|                       |  | 1725                   |  | 1730         |  | 1735    |  | 1740    |  |
|                       |  | 1745                   |  | 1750         |  | 1755    |  | 1760    |  |
|                       |  | 1765                   |  | 1770         |  | 1775    |  | 1780    |  |
|                       |  | 1785                   |  | 1790         |  | 1795    |  | 1800    |  |
|                       |  | 1805                   |  | 1810         |  | 1815    |  | 1820    |  |
|                       |  | 1825                   |  | 1830         |  | 1835    |  | 1840    |  |
|                       |  | 1845                   |  | 1850         |  | 1855    |  | 1860    |  |
|                       |  | 1865                   |  | 1870         |  | 1875    |  | 1880    |  |
|                       |  | 1885                   |  | 1890         |  | 1895    |  | 1900    |  |
|                       |  | 1905                   |  | 1910         |  | 1915    |  | 1920    |  |
|                       |  | 1925                   |  | 1930         |  | 1935    |  | 1940    |  |
|                       |  | 1945                   |  | 1950         |  | 1955    |  | 1960    |  |
|                       |  | 1965                   |  | 1970         |  | 1975    |  | 1980    |  |
|                       |  | 1985                   |  | 1990         |  | 1995    |  | 2000    |  |
|                       |  | 2005                   |  | 2010         |  | 2015    |  | 2020    |  |
|                       |  | 2025                   |  | 2030         |  | 2035    |  | 2040    |  |
|                       |  | 2045                   |  | 2050         |  | 2055    |  | 2060    |  |
|                       |  | 2065                   |  | 2070         |  | 2075    |  | 2080    |  |
|                       |  | 2085                   |  | 2090         |  | 2095    |  | 2100    |  |
|                       |  | 2105                   |  | 2110         |  | 2115    |  | 2120    |  |
|                       |  | 2125                   |  | 2130         |  | 2135    |  | 2140    |  |
|                       |  | 2145                   |  | 2150         |  | 2155    |  | 2160    |  |
|                       |  | 2165                   |  | 2170         |  | 2175    |  | 2180    |  |
|                       |  | 2185                   |  | 2190         |  | 2195    |  | 2200    |  |
|                       |  | 2205                   |  | 2210         |  | 2215    |  | 2220    |  |
|                       |  | 2225                   |  | 2230         |  | 2235    |  | 2240    |  |
|                       |  | 2245                   |  | 2250         |  | 2255    |  | 2260    |  |
|                       |  | 2265                   |  | 2270         |  | 2275    |  | 2280    |  |
|                       |  | 2285                   |  | 2290         |  | 2295    |  | 2300    |  |
|                       |  | 2305                   |  | 2310         |  | 2315    |  | 2320    |  |
|                       |  | 2325                   |  | 2330         |  | 2335    |  | 2340    |  |
|                       |  | 2345                   |  | 2350         |  | 2355    |  | 2360    |  |
|                       |  | 2365                   |  | 2370         |  | 2375    |  | 2380    |  |
|                       |  | 2385                   |  | 2390         |  | 2395    |  | 2400    |  |
|                       |  | 2405                   |  | 2410         |  | 2415    |  | 2420    |  |
|                       |  | 2425                   |  | 2430         |  | 2435    |  | 2440    |  |
|                       |  | 2445                   |  | 2450         |  | 2455    |  | 2460    |  |
|                       |  | 2465                   |  | 2470         |  | 2475    |  | 2480    |  |
|                       |  | 2485                   |  | 2490         |  | 2495    |  | 2500    |  |
|                       |  | 2505                   |  | 2510         |  | 2515    |  | 2520    |  |
|                       |  | 2525                   |  | 2530         |  | 2535    |  | 2540    |  |
|                       |  | 2545                   |  | 2550         |  | 2555    |  | 2560    |  |
|                       |  | 2565                   |  | 2570         |  | 2575    |  | 2580    |  |
|                       |  | 2585                   |  | 2590         |  | 2595    |  | 2600    |  |
|                       |  | 2605                   |  | 2610         |  | 2615    |  | 2620    |  |
|                       |  | 2625                   |  | 2630         |  | 2635    |  | 2640    |  |
|                       |  | 2645                   |  | 2650         |  | 2655    |  | 2660    |  |
|                       |  | 2665                   |  | 2670         |  | 2675    |  | 2680    |  |
|                       |  | 2685                   |  | 2690         |  | 2695    |  | 2700    |  |
|                       |  | 2705                   |  | 2710         |  | 2715    |  | 2720    |  |
|                       |  | 2725                   |  | 2730         |  | 2735    |  | 2740    |  |
|                       |  | 2745                   |  | 2750         |  | 2755    |  | 2760    |  |
|                       |  | 2765                   |  | 2770         |  | 2775    |  | 2780    |  |
|                       |  | 2785                   |  | 2790         |  | 2795    |  | 2800    |  |
|                       |  | 2805                   |  | 2810         |  | 2815    |  | 2820    |  |
|                       |  | 2825                   |  | 2830         |  | 2835    |  | 2840    |  |
|                       |  | 2845                   |  | 2850         |  | 2855    |  | 2860    |  |
|                       |  | 2865                   |  | 2870         |  | 2875    |  | 2880    |  |
|                       |  | 2885                   |  | 2890         |  | 2895    |  | 2900    |  |
|                       |  | 2905                   |  | 2910         |  | 2915    |  | 2920    |  |
|                       |  | 2925                   |  | 2930         |  | 2935    |  | 2940    |  |
|                       |  | 2945                   |  | 2950         |  | 2955    |  | 2960    |  |
|                       |  | 2965                   |  | 2970         |  | 2975    |  | 2980    |  |
|                       |  | 2985                   |  | 2990         |  | 2995    |  | 3000    |  |
|                       |  | 3005                   |  | 3010         |  | 3015    |  | 3020    |  |
|                       |  | 3025                   |  | 3030         |  | 3035    |  | 3040    |  |
|                       |  | 3045                   |  | 3050         |  | 3055    |  | 3060    |  |
|                       |  | 3065                   |  | 3070         |  | 3075    |  | 3080    |  |
|                       |  | 3085                   |  | 3090         |  | 3095    |  | 3100    |  |
|                       |  | 3105                   |  | 3110         |  | 3115    |  | 3120    |  |
|                       |  | 3125                   |  | 3130         |  | 3135    |  | 3140    |  |
|                       |  | 3145                   |  | 3150         |  | 3155    |  | 3160    |  |
|                       |  | 3165                   |  | 3170         |  | 3175    |  | 3180    |  |
|                       |  | 3185                   |  | 3190         |  | 3195    |  | 3200    |  |
|                       |  | 3205                   |  | 3210         |  | 3215    |  | 3220    |  |
|                       |  | 3225                   |  | 3230         |  | 3235    |  | 3240    |  |
|                       |  | 3245                   |  | 3250         |  | 3255    |  | 3260    |  |
|                       |  | 3265                   |  | 3270         |  | 3275    |  | 3280    |  |
|                       |  | 3285                   |  | 3290         |  | 3295    |  | 3300    |  |
|                       |  | 3305                   |  | 3310         |  | 3315    |  | 3320    |  |
|                       |  | 3325                   |  | 3330         |  | 3335    |  | 3340    |  |
|                       |  | 3345                   |  | 3350         |  | 3355    |  | 3360    |  |
|                       |  | 3365                   |  | 3370         |  | 3375    |  | 3380    |  |
|                       |  | 3385                   |  | 3390         |  | 3395    |  | 3400    |  |
|                       |  | 3405                   |  | 3410         |  | 3415    |  | 3420    |  |
|                       |  | 3425                   |  | 3430         |  | 3435    |  | 3440    |  |
|                       |  | 3445                   |  | 3450         |  | 3455    |  | 3460    |  |
|                       |  | 3465                   |  | 3470         |  | 3475    |  | 3480    |  |
|                       |  | 3485                   |  | 3490         |  | 3495    |  | 3500    |  |
|                       |  | 3505                   |  | 3510         |  | 3515    |  | 3520    |  |
|                       |  | 3525                   |  | 3530         |  | 3535    |  | 3540    |  |
|                       |  | 3545                   |  | 3550         |  | 3555    |  | 3560    |  |
|                       |  | 3565                   |  | 3570         |  | 3575    |  | 3580    |  |
|                       |  | 3585                   |  | 3590         |  | 3595    |  | 3600    |  |
|                       |  | 3605                   |  | 3610         |  | 3615    |  | 3620    |  |
|                       |  | 3625                   |  | 3630         |  | 3635    |  | 3640    |  |
|                       |  | 3645                   |  | 3650         |  | 3655    |  | 3660    |  |
|                       |  | 3665                   |  | 3670         |  | 3675    |  | 3680    |  |
|                       |  | 3685                   |  | 3690         |  | 3695    |  | 3700    |  |
|                       |  | 3705                   |  | 3710         |  | 3715    |  | 3720    |  |
|                       |  | 3725                   |  | 3730         |  | 3735    |  | 3740    |  |
|                       |  | 3745                   |  | 3750         |  | 3755    |  | 3760    |  |
|                       |  | 3765                   |  | 3770         |  | 3775    |  | 3780    |  |
|                       |  | 3785                   |  | 3790         |  | 3795    |  | 3800    |  |
|                       |  | 3805                   |  | 3810         |  | 3815    |  | 3820    |  |
|                       |  | 3825                   |  | 3830         |  | 3835    |  | 3840    |  |
|                       |  | 3845                   |  | 3850         |  | 3855    |  | 3860    |  |
|                       |  | 3865                   |  | 3870         |  | 3875    |  | 3880    |  |
|                       |  | 3885                   |  | 3890         |  | 3895    |  | 3900    |  |
|                       |  | 3905                   |  | 3910         |  | 3915    |  | 3920    |  |
|                       |  | 3925                   |  | 3930         |  | 3935    |  | 3940    |  |
|                       |  | 3945                   |  | 3950         |  | 3955    |  | 3960    |  |
|                       |  | 3965                   |  | 3970         |  | 3975    |  | 3980    |  |
|                       |  | 3985                   |  | 3990         |  | 3995    |  | 4000    |  |
|                       |  | 4005                   |  | 4010         |  | 4015    |  | 4020    |  |
|                       |  | 4025                   |  | 4030         |  | 4035    |  | 4040    |  |
|                       |  | 4045                   |  | 4050         |  | 4055    |  | 4060    |  |
|                       |  | 4065                   |  | 4070         |  | 4075    |  | 4080    |  |
|                       |  | 4085                   |  | 4090         |  | 4095    |  | 4100    |  |
|                       |  | 4105                   |  | 4110         |  | 4115    |  | 4120    |  |
|                       |  | 4125                   |  | 4130         |  | 4135    |  | 4140    |  |
|                       |  | 4145                   |  | 4150         |  | 4155    |  | 4160    |  |
|                       |  | 4165                   |  | 4170         |  | 4175    |  | 4180    |  |
|                       |  | 4185                   |  | 4190         |  | 4195    |  | 4200    |  |
|                       |  | 4205                   |  | 4210         |  | 4215    |  | 4220    |  |
|                       |  | 4225                   |  |              |  |         |  |         |  |

run5

HISTOGRAM OF VARIABLE 3 tswh

MEAN 553.268 ST.DEV. 111.718

EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY | INT. | CUM. |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|------|------|
| HAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |      |      |
| *225.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 1    |      |
| *250.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 2    |      |
| *275.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 3    |      |
| *300.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 4    |      |
| *325.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 5    |      |
| *350.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 6    |      |
| *375.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 7    |      |
| *400.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 8    |      |
| *425.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 9    |      |
| *450.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 10   |      |
| *475.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 11   |      |
| *500.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 12   |      |
| *525.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 13   |      |
| *550.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 14   |      |
| *575.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 15   |      |
| *600.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 16   |      |
| *625.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 17   |      |
| *650.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 18   |      |
| *675.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 19   |      |
| *700.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 20   |      |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 21   |      |

HISTOGRAM OF VARIABLE 1 tsv1

| HISTOGRAM OF VARIABLE  | 1 tsv1 | SYMBOL COUNT | MEAN           | ST.DEV. |
|------------------------|--------|--------------|----------------|---------|
|                        | X      | 50           | 289.988        | 157.533 |
| EACH SYMBOL REPRESENTS |        |              | 1 OBSERVATIONS |         |

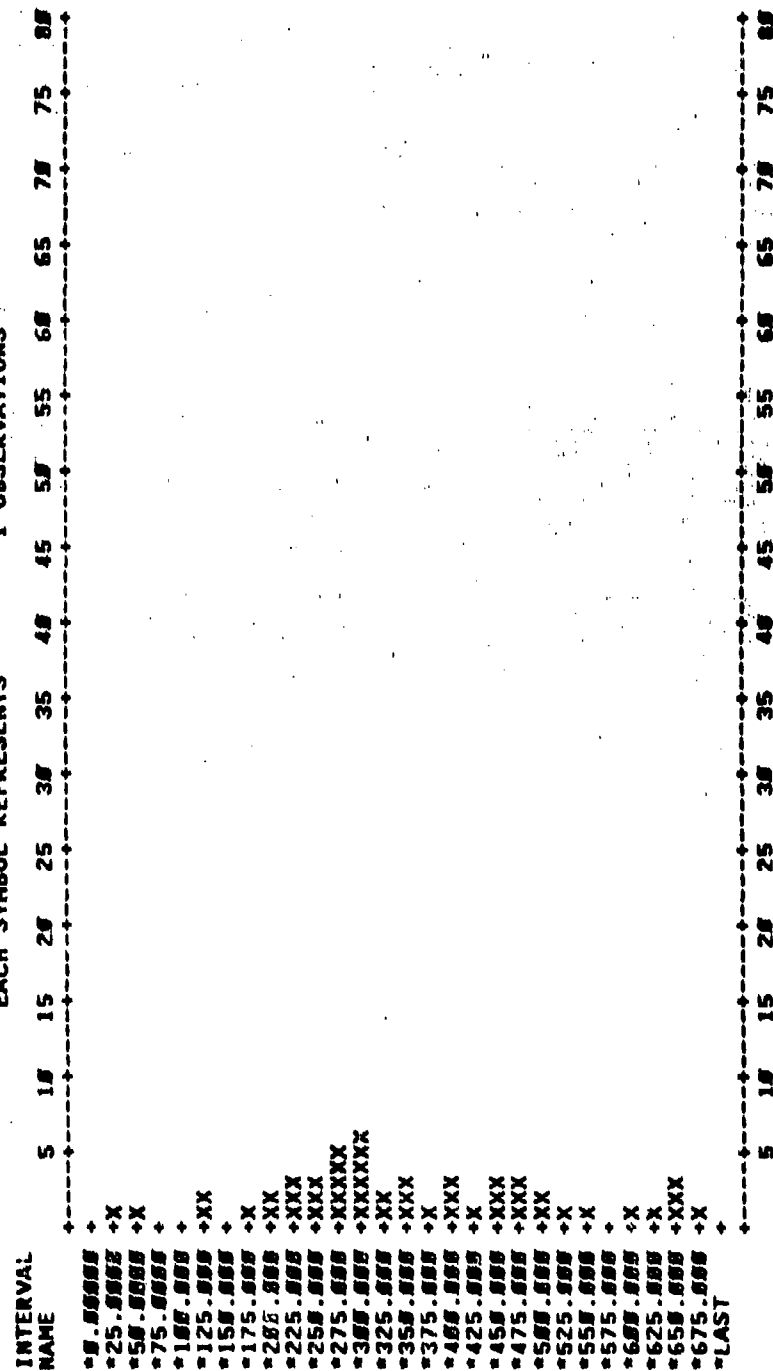
[illegible]

run6

HISTOGRAM OF VARIABLE 2 tsvr

MEAN 345.648 ST. DEV. 157.261  
EACH SYMBOL REPRESENTS 58 OBSERVATIONS

FREQUENCY  
INT. CUM.



run6

| HISTOGRAM OF VARIABLE  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 3 tsvh                 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| SYMBOL COUNT           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| X 50                   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| EACH SYMBOL REPRESENTS |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 1 OBSERVATIONS         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| MEAN 399.448           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ST. DEV. 153.829       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| FREQUENCY              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| INT. CUM.              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| INTERVAL               | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |
| NAME                   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *50.0000 +             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
| *75.0000 +X            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *100.0000 +X           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *125.0000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
| *150.0000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
| *175.0000 +XX          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *200.0000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *225.0000 +X           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
| *250.0000 +XX          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *275.0000 +X           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7  |
| *300.0000 +XXXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *325.0000 +XXXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *350.0000 +XXXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13 |
| *375.0000 +XXXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17 |
| *400.0000 +XXX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *425.0000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22 |
| *450.0000 +XXX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 26 |
| *475.0000 +X           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *500.0000 +XXX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 29 |
| *525.0000 +XXXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32 |
| *550.0000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 33 |
| *575.0000 +XX          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *600.0000 +X           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 36 |
| *625.0000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 41 |
| *650.0000 +XX          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 41 |
| *675.0000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *700.0000 +XXXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 43 |
| *LAST                  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 44 |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 46 |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |



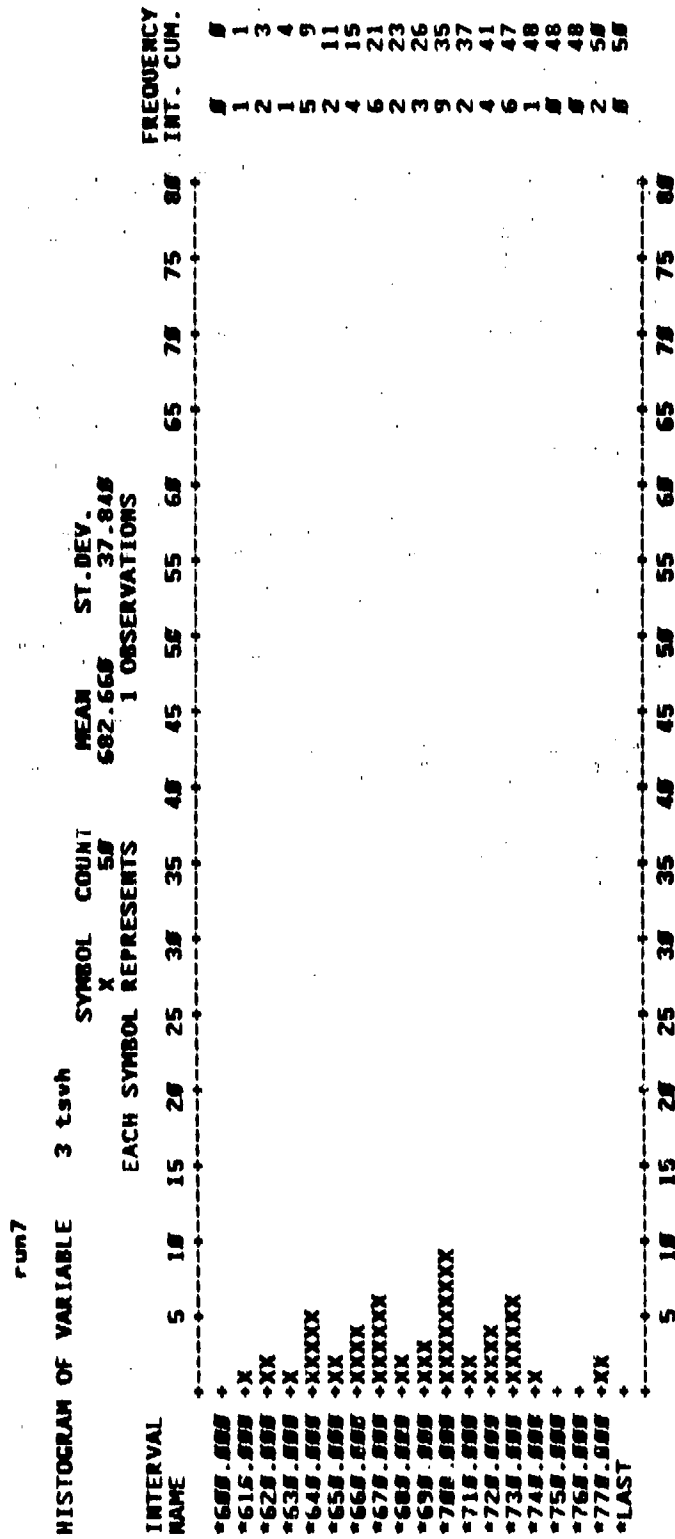
run7

| HISTOGRAM OF VARIABLE | 2       | tsvn | S  | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |
|-----------------------|---------|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| NAME                  | 5       | 10   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |    |    |
| *550.000              | +X      |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *560.000              | +XX     |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *570.000              | +X      |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *580.000              | +XX     |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6  |
| *590.000              | +XXX    |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 9  |
| *600.000              | +XXX    |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12 |
| *610.000              | +XXXX   |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 16 |
| *620.000              | +XXX    |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19 |
| *630.000              | +XX     |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21 |
| *640.000              | +XX     |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 23 |
| *650.000              | +XXXXX  |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28 |
| *660.000              | +XXXXXX |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 34 |
| *670.000              | +XXX    |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 37 |
| *680.000              | +XXXX   |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 41 |
| *690.000              | +XXXX   |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 45 |
| *700.000              | +XXX    |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48 |
| *710.000              | +       |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48 |
| *720.000              | +       |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48 |
| *730.000              | +X      |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 49 |
| *740.000              | +X      |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |
| *LAST                 | +       |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |

MEAN 637.648  
ST. DEV. 45.824  
OBSERVATIONS 1

FREQUENCY  
INT. CUM.

1 1  
2 2  
3 3  
4 4  
5 5  
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78 78  
79 79  
80 80



run8

HISTOGRAM OF VARIABLE 1 tsu1

MEAN 463.928  
ST. DEV. 126.183  
58  
1 OBSERVATIONS

SYMBOL COUNT  
X 58  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.

INTERVAL 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

|                  |   |    |
|------------------|---|----|
| *125.000 +       | 1 | 1  |
| *150.000 +X      | 1 | 2  |
| *175.000 +X      | 1 | 3  |
| *200.000 +       | 1 | 4  |
| *225.000 +X      | 1 | 5  |
| *250.000 +X      | 1 | 6  |
| *275.000 +X      | 1 | 7  |
| *300.000 +X      | 1 | 8  |
| *325.000 +X      | 1 | 9  |
| *350.000 +X      | 1 | 13 |
| *375.000 +X      | 1 | 15 |
| *400.000 +XXXX   | 4 | 20 |
| *425.000 +XX     | 5 | 23 |
| *450.000 +XXXXX  | 6 | 29 |
| *475.000 +XXX    | 4 | 33 |
| *500.000 +XXXXXX | 3 | 36 |
| *525.000 +XXXX   | 2 | 38 |
| *550.000 +XXX    | 5 | 43 |
| *575.000 +XX     | 5 | 48 |
| *600.000 +XXXXX  | 1 | 49 |
| *625.000 +XXXXX  | 1 | 50 |
| *650.000 +X      | 1 | 51 |
| *675.000 +X      | 1 | 52 |
| *LAST            | 1 | 53 |

| run8                  |         |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    |           |           |
|-----------------------|---------|---|----|----|----|----|----|----|----|----|------|------------------------|----|----------------|----------|----|----|-----------|-----------|
| HISTOGRAM OF VARIABLE |         |   |    |    |    |    |    |    |    | 2  | tsvn | SYMBOL COUNT           |    | MEAN           | ST. DEV. |    |    |           |           |
|                       |         |   |    |    |    |    |    |    |    |    |      | X                      | 58 | 518.788        | 125.781  |    |    |           |           |
|                       |         |   |    |    |    |    |    |    |    |    |      | EACH SYMBOL REPRESENTS |    | 1 OBSERVATIONS |          |    |    |           |           |
| INTERVAL              | NAME    | 5 | 18 | 15 | 28 | 25 | 38 | 35 | 48 | 45 | 58   | 55                     | 68 | 65             | 78       | 75 | 88 | FREQUENCY | INT. CUM. |
| *158.888              | +       |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 8         | 8         |
| *175.888              | +X      |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 1         | 9         |
| *208.888              | +       |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 8         | 17        |
| *225.888              | +X      |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 1         | 18        |
| *258.888              | +       |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 8         | 26        |
| *275.888              | +       |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 8         | 34        |
| *308.888              | +XX     |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 2         | 36        |
| *325.888              | +X      |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 2         | 38        |
| *358.888              | +X      |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 5         | 43        |
| *375.888              | +X      |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 1         | 44        |
| *408.888              | +XX     |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 7         | 51        |
| *425.888              | +       |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 2         | 53        |
| *458.888              | +XXX    |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 8         | 61        |
| *475.888              | +XX     |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 3         | 64        |
| *508.888              | +XXXXXX |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 12        | 76        |
| *525.888              | +XXX    |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 3         | 79        |
| *558.888              | +XXX    |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 6         | 85        |
| *575.888              | +XXXXXX |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 3         | 88        |
| *608.888              | +XX     |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 6         | 94        |
| *625.888              | +XXXX   |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 2         | 96        |
| *658.888              | +XXXX   |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 4         | 100       |
| *675.888              | +XXXXXX |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 4         | 104       |
| *708.888              | +XX     |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 6         | 110       |
| *LAST                 | +       |   |    |    |    |    |    |    |    |    |      |                        |    |                |          |    |    | 2         | 112       |
|                       |         | 5 | 18 | 15 | 28 | 25 | 38 | 35 | 48 | 45 | 58   | 55                     | 68 | 65             | 78       | 75 | 88 |           |           |

run8

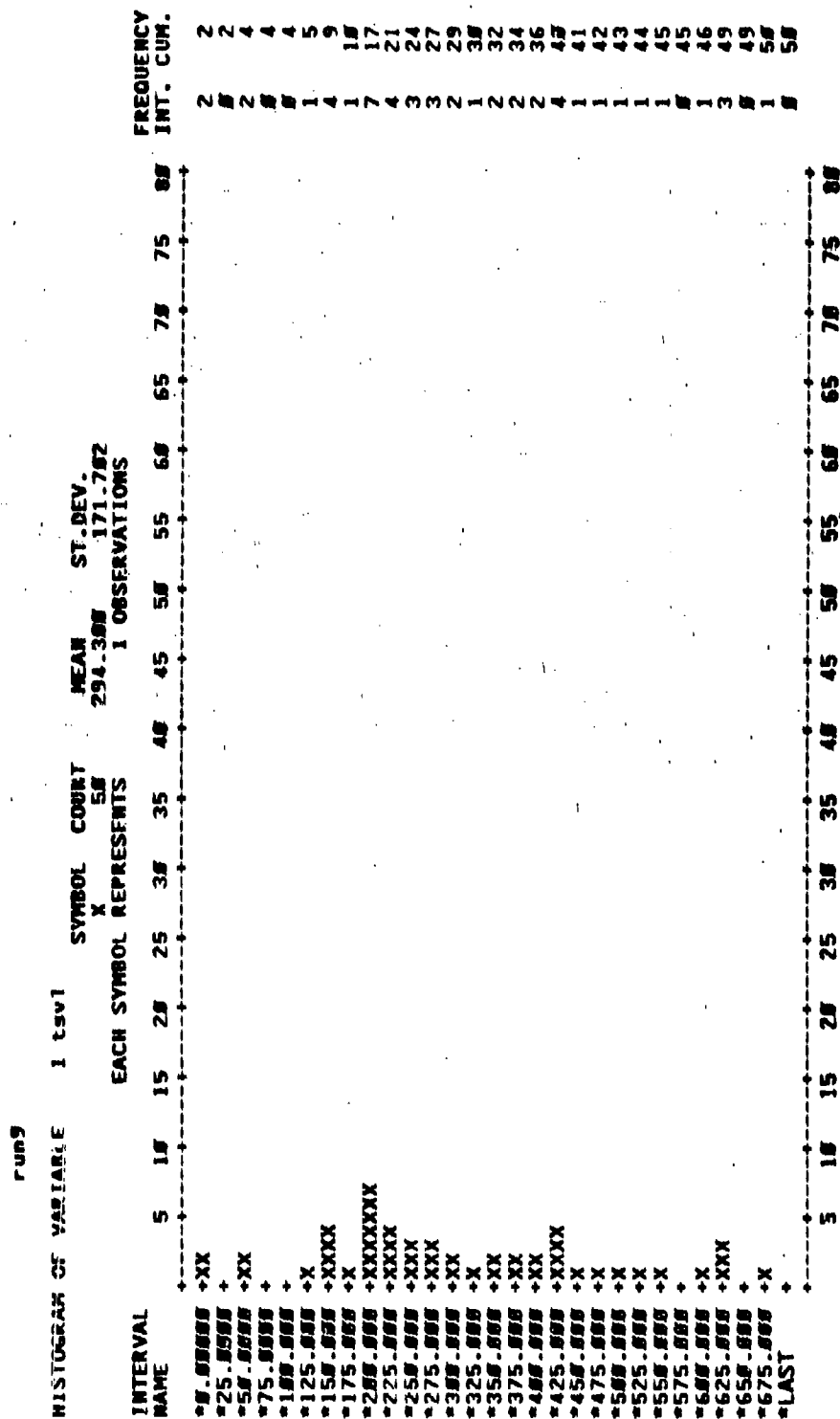
# HISTOGRAM OF VARIABLE 3 tsvh

MEAN 564.748 ST. DEV. 122.888  
 50  
 EACH SYMBOL REPRESENTS 1 OBSERVATIONS

FREQUENCY  
 INT. CUM.

INTERVAL 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

|                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|
| *200.000 +         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0  |
| *225.000 +X        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |
| *250.000 +         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |
| *275.000 +         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  |
| *300.000 +X        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2  |
| *325.000 +X        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3  |
| *350.000 +X        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4  |
| *375.000 +XX       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6  |
| *400.000 +         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6  |
| *425.000 +X        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 7  |
| *450.000 +XX       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9  |
| *475.000 +         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 12 |
| *500.000 +XXX      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 15 |
| *525.000 +XXX      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 19 |
| *550.000 +XXXX     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 24 |
| *575.000 +XXXXX    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 28 |
| *600.000 +XXXXX    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 31 |
| *625.000 +XXX      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 33 |
| *650.000 +XX       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 40 |
| *675.000 +XXXXXXXX |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 46 |
| *700.000 +XXXXXXXX |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 49 |
| *725.000 +XXX      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |
| *750.000 +X        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |
| *LAST              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50 |



run9

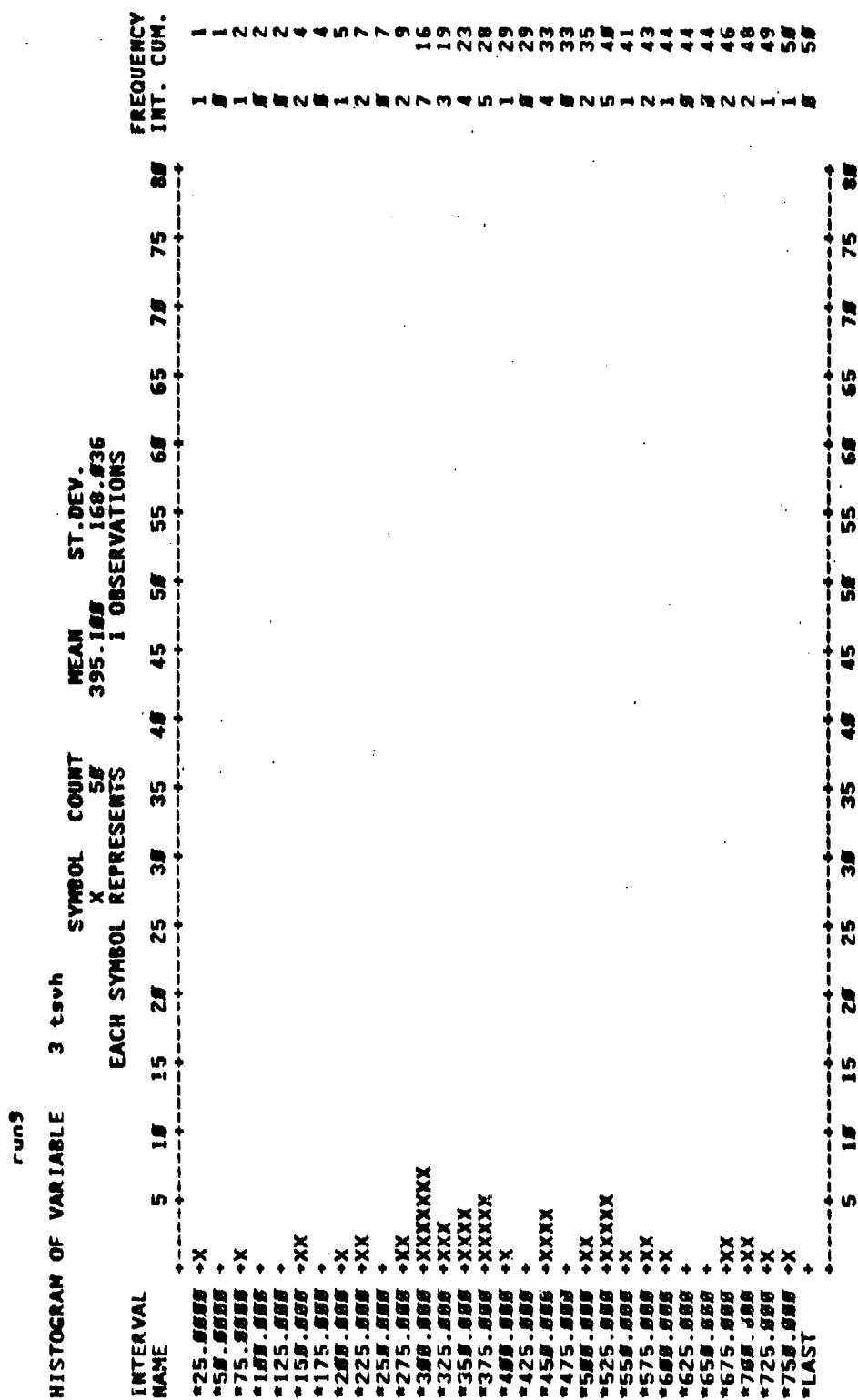
HISTOGRAM OF VARIABLE 2 tsvn

MEAN 345.748 ST.DEV. 171.846  
I OBSERVATIONS

SYMBOL COUNT  
X 50  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *0.0000  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *25.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *50.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *75.0000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *100.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *125.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *150.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *175.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *200.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *225.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7  |
| *250.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *275.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *300.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *325.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 16 |
| *350.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 16 |
| *375.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *400.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19 |
| *425.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6  |
| *450.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25 |
| *475.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 27 |
| *500.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *525.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *550.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *575.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *600.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 33 |
| *625.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 33 |
| *650.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *675.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 35 |
| *700.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48 |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 41 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 44 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 44 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 45 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 46 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 49 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 58 |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 58 |

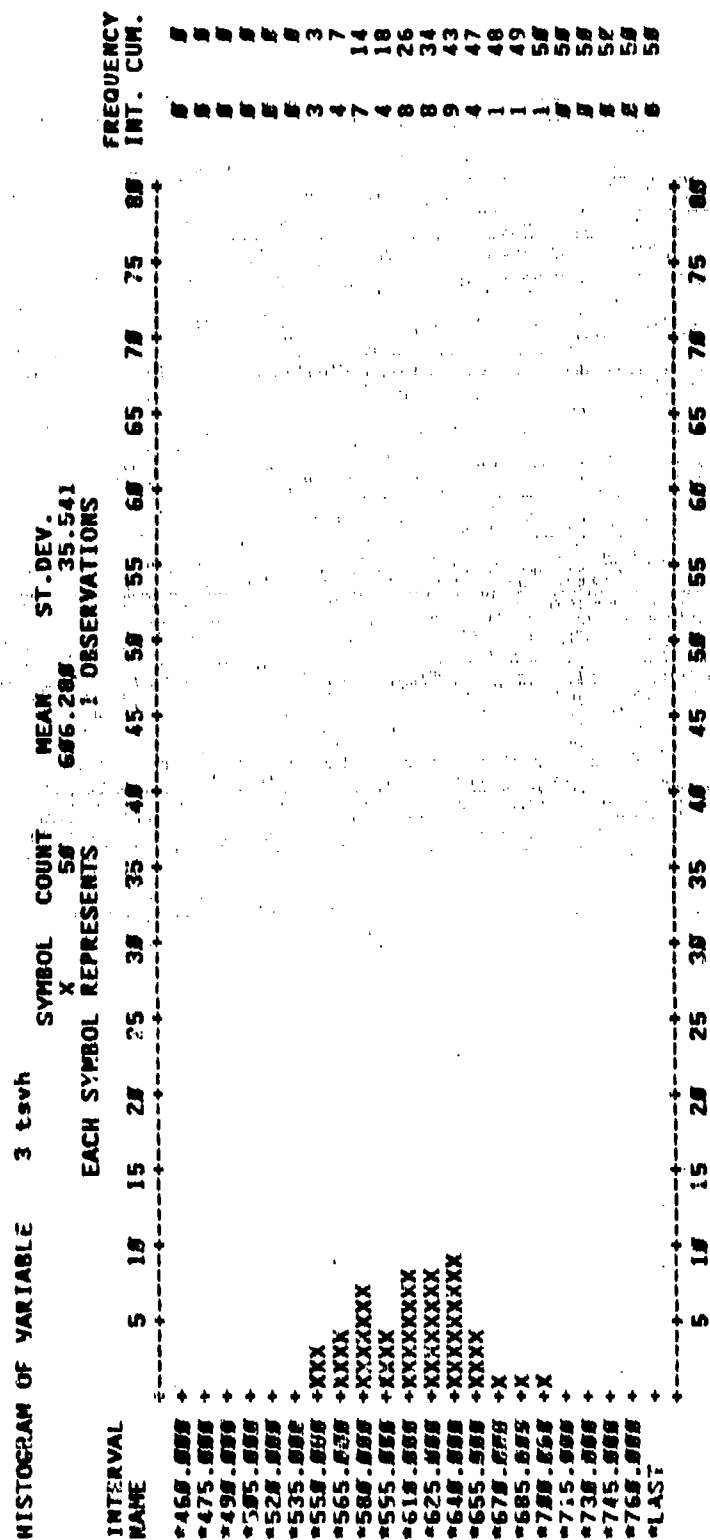




RUN18

| HISTOGRAM OF VARIABLE  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2  | tsvn     |    | SYMBOL COUNT |    | MEAN   |    | ST.DEV.   |    | FREQUENCY |    |    |    |    |    |    |   |
|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|----------|----|--------------|----|--------|----|-----------|----|-----------|----|----|----|----|----|----|---|
| EACH SYMBOL REPRESENTS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 58 | X        |    | 576.548      |    | 48.447 |    | INT. CUM. |    |           |    |    |    |    |    |    |   |
| INTERVAL               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5  | 10       | 15 | 20           | 25 | 30     | 35 | 40        | 45 | 50        | 55 | 60 | 65 | 70 | 75 | 80 |   |
| NAME                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    |   |
| *415.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *430.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *445.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *460.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *475.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *490.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *505.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XX       |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 2 |
| *520.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XXX      |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 3 |
| *535.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XXXX     |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 4 |
| *550.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XXXXX    |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 5 |
| *565.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XXXXXX   |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 6 |
| *580.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XXXXXX   |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 7 |
| *595.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XXXXXXXX |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *610.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XXXXXXXX |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 7 |
| *625.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XXXXXX   |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 6 |
| *640.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | XX       |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 2 |
| *655.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | X        |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 1 |
| *670.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 1 |
| *685.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  | X        |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 1 |
| *700.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *715.000               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |
| *LAST                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +  |          |    |              |    |        |    |           |    |           |    |    |    |    |    |    | 8 |

run10



run11

HISTOGRAM OF VARIABLE I tsv1

SYMBOL COUNT MEAN ST. DEV.  
X 50 447.888 101.603  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL           | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|--------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *150.000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *175.000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *200.000 +X        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *225.000 +X        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *250.000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *275.000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *300.000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *325.000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *350.000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *375.000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *400.000 +XXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *425.000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *450.000 +XXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 10        |
| *475.000 +XXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13        |
| *500.000 +XXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *525.000 +XXXXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7         |
| *550.000 +XXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *575.000 +XXXXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *600.000 +XXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *625.000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *650.000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *LAST              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |

run11

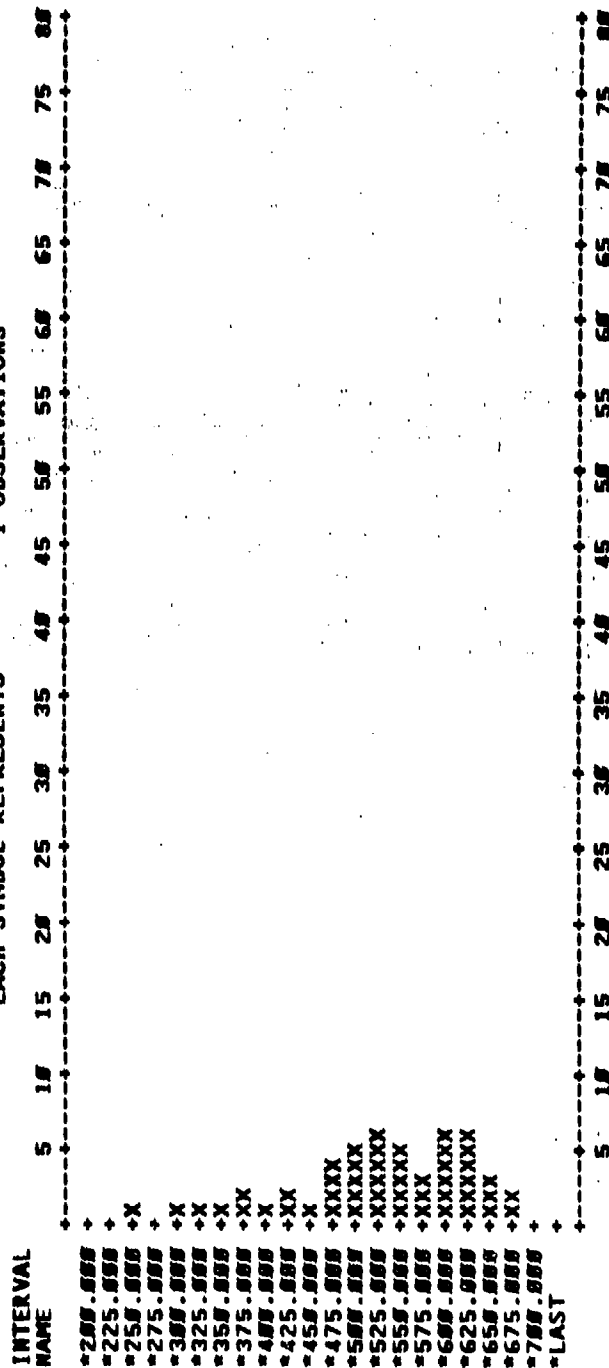
| HISTOGRAM OF VARIABLE 2               |         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---------------------------------------|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| SYMBOL COUNT                          |         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| X 50                                  |         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| EACH SYMBOL REPRESENTS 1 OBSERVATIONS |         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| MEAN 483.500                          |         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ST. DEV. 181.093                      |         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| FREQUENCY INT. CUM.                   |         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| INTERVAL NAME                         | 5       | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| *150.000                              | +       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *175.000                              | +       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *200.000                              | +       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *225.000                              | +X      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *250.000                              | +X      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *275.000                              | +       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *300.000                              | +XX     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *325.000                              | +X      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *350.000                              | +X      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *375.000                              | +XX     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *400.000                              | +X      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *425.000                              | +XXXX   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *450.000                              | +XX     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *475.000                              | +XXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *500.000                              | +XXXX   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *525.000                              | +XXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *550.000                              | +XXXX   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *575.000                              | +XXXX   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *600.000                              | +XXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *625.000                              | +XXXXX  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *650.000                              | +       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *LAST                                 | +       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

run11

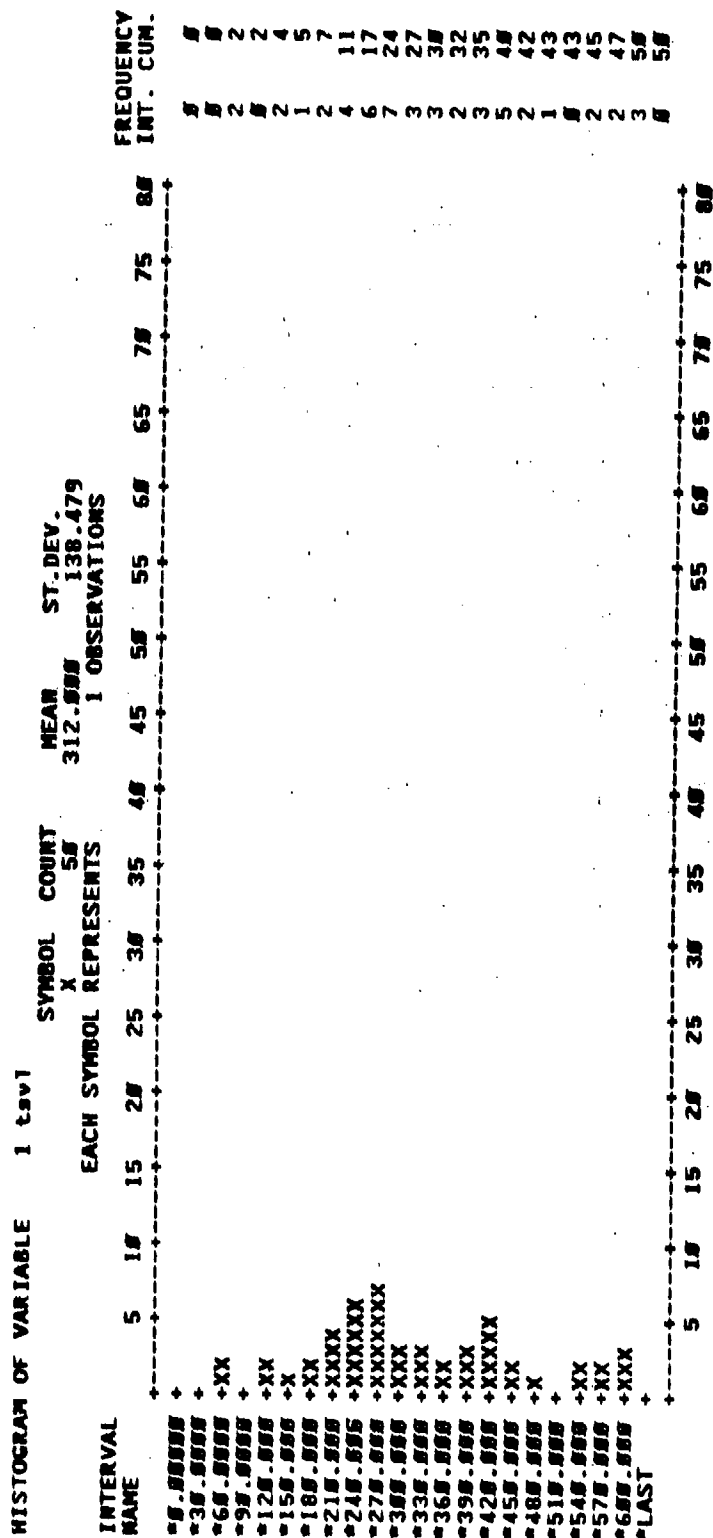
HISTOGRAM OF VARIABLE 3 tswh

MEAN 513.748 ST. DEV. 99.867  
 SYMBOL COUNT 58  
 X  
 EACH SYMBOL REPRESENTS 1 OBSERVATIONS

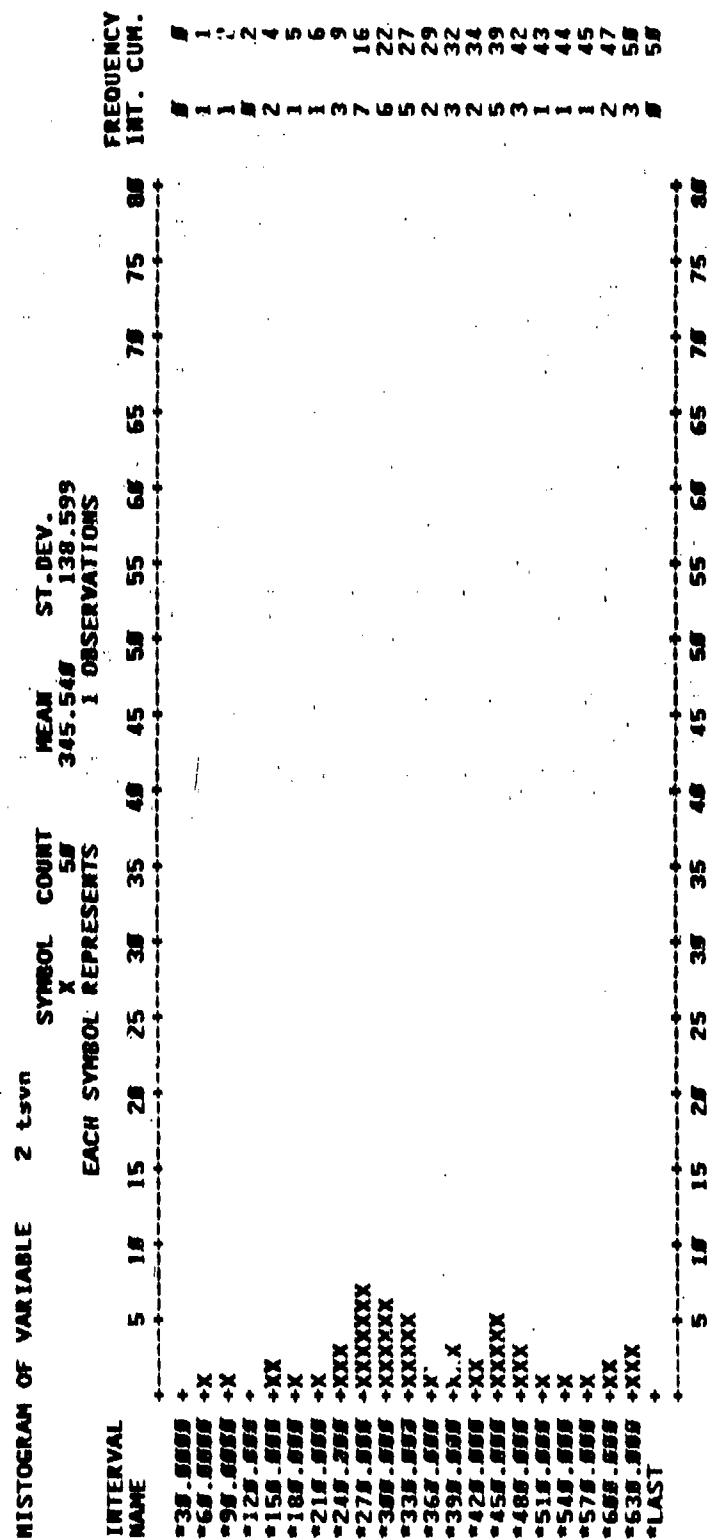
FREQUENCY  
 INT. CUM.



run12



run12



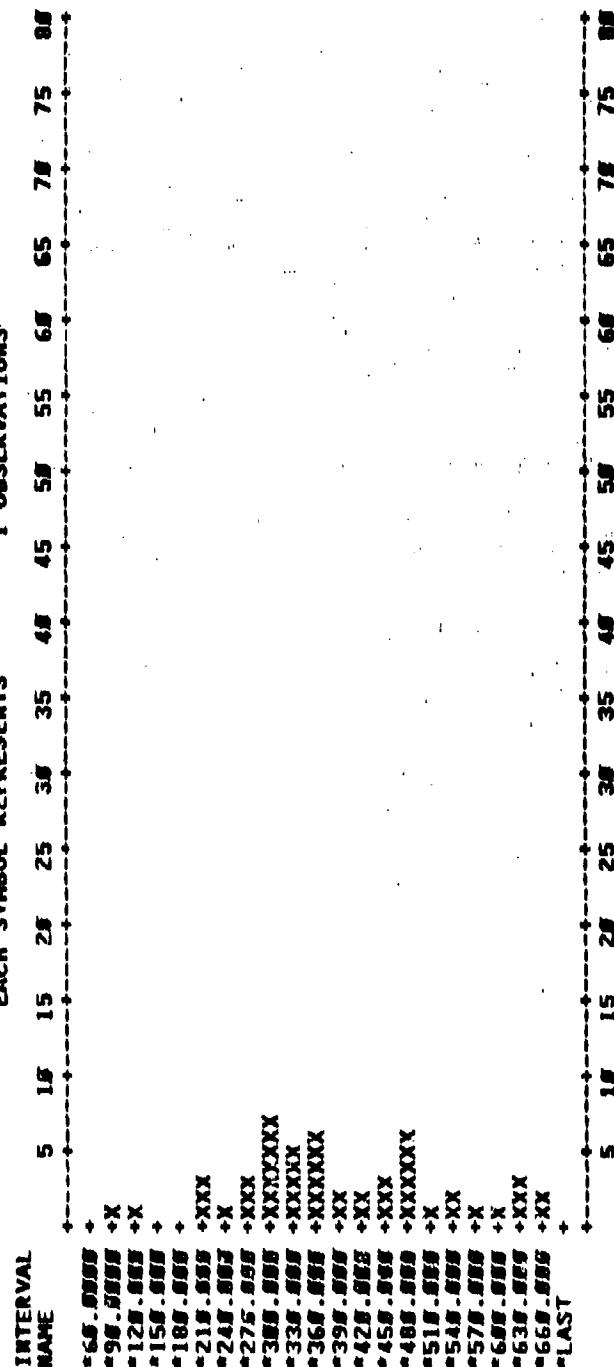
run12

HISTOGRAM OF VARIABLE 3 tswh

MEAN 377.888  
ST. DEV. 135.891  
1 OBSERVATIONS

SOURCE COUNT  
X 58  
EACH SYMBOL REPRESENTS

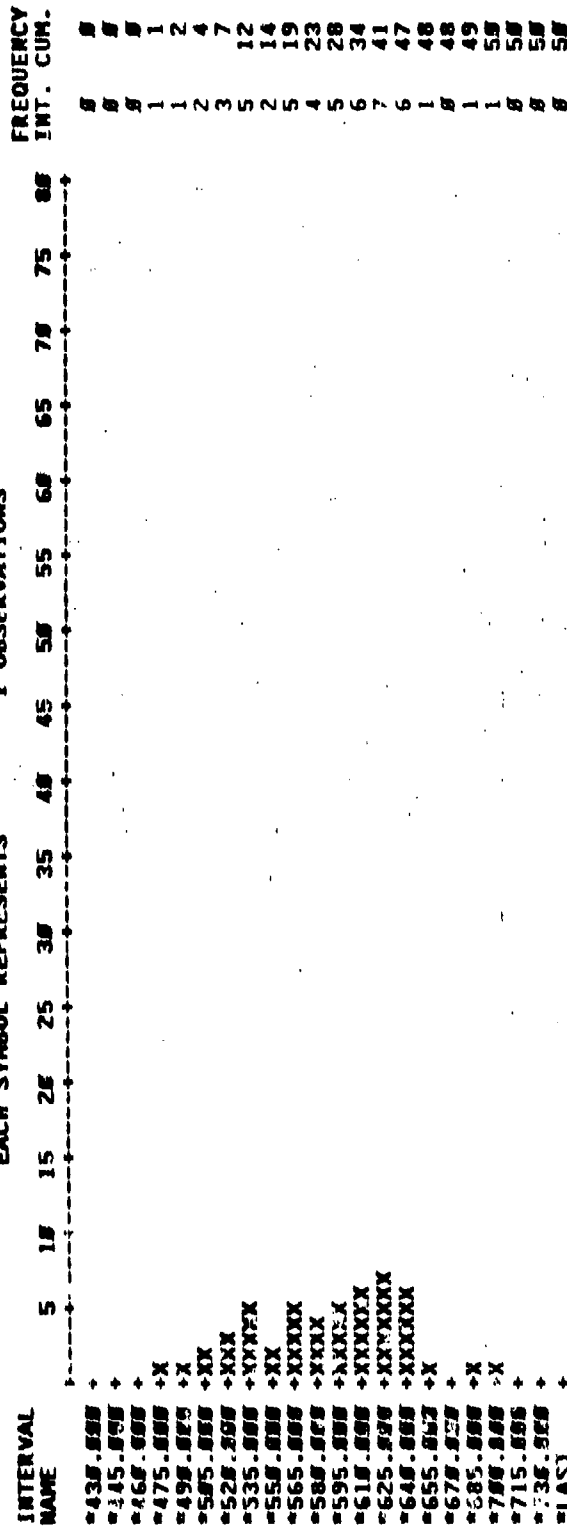
FREQUENCY  
INT. CUM.



run13

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT NEAN ST.DEV.  
X 50 49.292  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS



run13

| HISTOGRAM OF VARIABLE  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2 tsyn    | SYMBOL COUNT |         | MEAN   | ST. DEV. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|--------------|---------|--------|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| EACH SYMBOL REPRESENTS |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 58        | X            | 611.368 | 42.285 |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | OBSERVATIONS |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| INTERVAL               | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NAME                   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *498.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *505.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *520.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *535.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *550.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *565.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *580.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *595.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *610.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *625.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *640.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *655.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *670.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 23        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *685.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *700.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 37        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *715.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 44        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *730.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *745.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 49        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *760.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *775.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *790.000               | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 58        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *LAST                  | + |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 58        |              |         |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

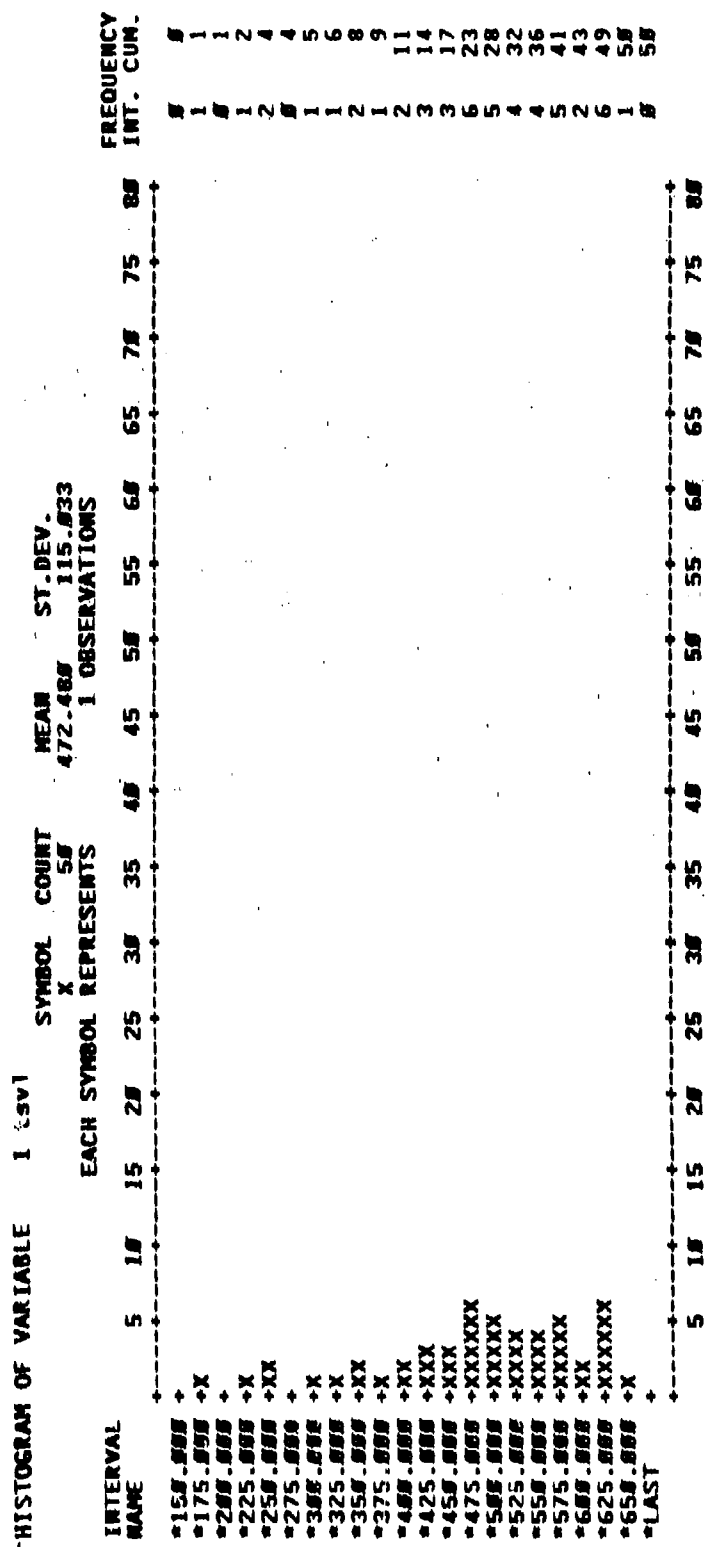
### HISTOGRAM OF VARIABLE 3 tsvh

| SYMBOL | COUNT | MEAN    | ST. DEV. |
|--------|-------|---------|----------|
| X      | 58    | 637.428 | 37.721   |

EACH SYMBOL REPRESENTS 1 OBSERVATIONS

[illegible]

FIG. 14



```

run14
HISTOGRAM OF VARIABLE 2 tsyn      MEAN  ST.DEV.
                                503.360  115.089
                                1 OBSERVATIONS
EACH SYMBOL REPRESENTS
SYMBOL COUNT
X 50
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
INTERVAL NAME  5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
-175.000 +
-200.000 +X
-225.000 +
-250.000 +X
-275.000 +
-300.000 +XX
-325.000 +X
-350.000 +X
-375.000 +X
-400.000 +XX
-425.000 +
-450.000 +XXXXX
-475.000 +X
-500.000 +XXXXXXXXX
-525.000 +XXX
-550.000 +XXXXXXXXX
-575.000 +XX
-600.000 +XXXXX
-625.000 +XXX
-650.000 +XXXXXX
-675.000 +XX
- LAST
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
                                5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
FREQUENCY
INT. CUM.
0 1 1 1 1 2 2 2 4 5 5 6 7 9 9 14 15 22 25 32 34 39 42 48 50 50

```

run14

| HISTOGRAM OF VARIABLE |   |         | 3 tsvh                                         |  |  | SYMBOL COUNT |  | MEAN           |  | ST. DEV. |  |
|-----------------------|---|---------|------------------------------------------------|--|--|--------------|--|----------------|--|----------|--|
| INTERVAL              |   |         | EACH SYMBOL REPRESENTS                         |  |  | X            |  | 533.280        |  | 112.223  |  |
| NAME                  |   |         | 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 |  |  | 50           |  | 1 OBSERVATIONS |  |          |  |
| *200.000              | + |         |                                                |  |  |              |  |                |  |          |  |
| *225.000              | + | X       |                                                |  |  |              |  |                |  |          |  |
| *250.000              | + |         |                                                |  |  |              |  |                |  |          |  |
| *275.000              | + |         |                                                |  |  |              |  |                |  |          |  |
| *300.000              | + | X       |                                                |  |  |              |  |                |  |          |  |
| *325.000              | + | XX      |                                                |  |  |              |  |                |  |          |  |
| *350.000              | + |         |                                                |  |  |              |  |                |  |          |  |
| *375.000              | + | XX      |                                                |  |  |              |  |                |  |          |  |
| *400.000              | + | X       |                                                |  |  |              |  |                |  |          |  |
| *425.000              | + | XX      |                                                |  |  |              |  |                |  |          |  |
| *450.000              | + |         |                                                |  |  |              |  |                |  |          |  |
| *475.000              | + | XXXX    |                                                |  |  |              |  |                |  |          |  |
| *500.000              | + | XXX     |                                                |  |  |              |  |                |  |          |  |
| *525.000              | + | XXXXXX  |                                                |  |  |              |  |                |  |          |  |
| *550.000              | + | XXX     |                                                |  |  |              |  |                |  |          |  |
| *575.000              | + | XXXXXX  |                                                |  |  |              |  |                |  |          |  |
| *600.000              | + | X       |                                                |  |  |              |  |                |  |          |  |
| *625.000              | + | XXXXXXX |                                                |  |  |              |  |                |  |          |  |
| *650.000              | + | XXX     |                                                |  |  |              |  |                |  |          |  |
| *675.000              | + | XXXXXX  |                                                |  |  |              |  |                |  |          |  |
| *700.000              | + | XX      |                                                |  |  |              |  |                |  |          |  |
| *LAST                 | + |         |                                                |  |  |              |  |                |  |          |  |

FREQUENCY  
INT. CUM.  
0 1 1 1 1 2 2 4 4 6 6 7 9 9 13 16 22 25 31 32 39 42 48 50 50

run15

| HISTOGRAM OF VARIABLE  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 tsv1                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| SYMBOL COUNT           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| X 50                   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| EACH SYMBOL REPRESENTS |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 1 OBSERVATIONS         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ST. DEV. 157.155       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| MEAN 316.180           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| FREQ. 1                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| INT. COM.              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| INTERVAL               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| NAME                   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 5                      | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |
| *0.0000                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *35.0000               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *70.0000               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *105.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *140.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *175.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *210.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *245.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *280.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *315.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *350.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 10 |
| *385.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11 |
| *420.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21 |
| *455.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *490.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25 |
| *525.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *560.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28 |
| *595.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 30 |
| *630.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *665.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 33 |
| *700.0000              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *LAST                  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 38 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 41 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 42 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 44 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 44 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 45 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 46 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 49 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
|                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50 |

EACH SYMBOL REPRESENTS  
 X  
 50  
 316.180  
 157.155  
 1 OBSERVATIONS  
 FREQUENCY  
 INT. CUM.  
 1 1  
 1 1  
 2 2  
 2 2  
 4 4  
 1 1  
 5 5  
 3 3  
 8 8  
 2 2  
 10 10  
 11 11  
 4 4  
 25 25  
 3 3  
 28 28  
 2 2  
 30 30  
 3 3  
 33 33  
 5 5  
 38 38  
 3 3  
 41 41  
 1 1  
 42 42  
 2 2  
 44 44  
 1 1  
 45 45  
 1 1  
 46 46  
 3 3  
 49 49  
 1 1  
 50 50  
 8 8  
 50 50

### HISTOGRAM OF VARIABLE 2 tsyn

| HISTOGRAM OF VARIABLE  | 2 tsyn | SYMBOL COUNT | MEAN           | ST. DEV. |
|------------------------|--------|--------------|----------------|----------|
|                        | X      | 58           | 345.648        | 157.261  |
| EACH SYMBOL REPRESENTS |        |              | 1 OBSERVATIONS |          |

FREQUENCY  
INT. CUM.

1 2 3 4 5 8 13 19 26 29 31 33 37 41 43 44 45 46 58 58  
1 1 1 1 1 1 3 5 6 7 7 3 2 2 2 4 4 4 2 2 1 1 1 1 4 8 8

[illegible]

run15

# HISTOGRAM OF VARIABLE 3 tswh

MEAN 373.988  
ST.DEV. 154.975  
1 OBSERVATIONS

SYMBOL COUNT  
X 58  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.

| INTERVAL NAME        | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |
|----------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| *0.00000 +           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *35.00000 +          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *70.00000 +XX        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *105.00000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *140.00000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *175.00000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *210.00000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6  |
| *245.00000 +XXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 9  |
| *280.00000 +XXXXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14 |
| *315.00000 +XXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21 |
| *350.00000 +XXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 26 |
| *385.00000 +XXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *420.00000 +XXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *455.00000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *490.00000 +XXXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6  |
| *525.00000 +X        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *560.00000 +XXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *595.00000 +         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *630.00000 +X        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *665.00000 +XXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *700.00000 +XX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *735.00000 +X        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *LAST                |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 58 |

**run 16**

### HISTOGRAM OF VARIABLE 1 tsv1

| SYMBOL | COUNT | MEAN    | ST. DEV. |
|--------|-------|---------|----------|
| X      | 50    | 659.268 | 51.383   |

EACH SYMBOL REPRESENTS 1 OBSERVATION.

**FREQUENCY  
INT. CUM.**

INTERVAL  
NAME

|          |           |
|----------|-----------|
| *468.888 | +         |
| *475.888 | +         |
| *498.888 | +         |
| *505.388 | +X        |
| *528.888 | +XX       |
| *535.888 | +XX       |
| *558.888 | +XXX      |
| *565.888 | +XXXX     |
| *588.888 | +XXXXX    |
| *595.888 | +XXXX     |
| *618.888 | +XXX      |
| *625.888 | +XXXXXX   |
| *648.888 | +XXXXXXXX |
| *655.888 | +XXX      |
| *678.888 | +XXXXXXXX |
| *685.888 | +X        |
| *788.888 | +         |
| *715.888 | +X        |
| *738.888 | +X        |
| *745.888 | +         |
| *768.888 | +         |
| LAST     | +         |

run16

| HISTOGRAM OF VARIABLE |             | 2 tsvr                 |    | SYMBOL |    | COUNT | MEAN    | ST. DEV. |    |    |    |    |    |    |    |    |    |    | FREQUENCY |
|-----------------------|-------------|------------------------|----|--------|----|-------|---------|----------|----|----|----|----|----|----|----|----|----|----|-----------|
| INTERVAL              |             | EACH SYMBOL REPRESENTS |    | X      |    | 50    | 637.640 | 45.024   |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| NAME                  |             | 5                      | 10 | 15     | 20 | 25    | 30      | 35       | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |           |
| *490.000              | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 0  |           |
| *505.000              | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 0  |           |
| *520.000              | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 0  |           |
| *535.000              | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 0  |           |
| *550.000              | +X          |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 1  |           |
| *565.000              | +XX         |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 2  |           |
| *580.000              | +XXX        |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 3  |           |
| *595.000              | +XXXX       |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 4  |           |
| *610.000              | +XXXXXX     |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 6  |           |
| *625.000              | +XXXXX      |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 10 |           |
| *640.000              | +XXX        |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 16 |           |
| *655.000              | +XXXXX      |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 20 |           |
| *670.000              | +XXXXXXXXXX |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 30 |           |
| *685.000              | +XXXXXX     |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 28 |           |
| *700.000              | +XXXXX      |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 37 |           |
| *715.000              | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 43 |           |
| *730.000              | +X          |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 5  |           |
| *745.000              | +X          |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 5  |           |
| *760.000              | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 0  |           |
| *775.000              | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 1  |           |
| *790.000              | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 1  |           |
| *LAST                 | +           |                        |    |        |    |       |         |          |    |    |    |    |    |    |    |    |    | 0  |           |

RUN16

HISTOGRAM OF VARIABLE 3 tsvh

MEAN 651.726  
ST. DEV. 48.699  
OBSERVATIONS 1

SYMBOL COUNT  
X 58  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |    |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *520.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *535.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *550.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *565.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *580.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| *595.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |
| *610.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *625.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *640.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *655.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7  |
| *670.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11 |
| *685.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18 |
| *700.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21 |
| *715.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| *730.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |
| *745.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 10 |
| *760.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4  |
| *775.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *790.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8  |
| *805.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
| *820.000 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0  |

run17

| HISTOGRAM OF VARIABLE I tsv1 |             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
|------------------------------|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| EACH SYMBOL REPRESENTS       |             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| SYMBOL COUNT                 |             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| X 50                         |             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| MEAN 498.928                 |             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| ST-DEV. 125.338              |             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| OBSERVATIONS                 |             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| INTERVAL                     | 5           | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
| NAME                         |             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *128.000                     | +           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *158.000                     | +X          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *188.000                     | +           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *218.000                     | +X          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *248.000                     | +           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *278.000                     | +XX         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *308.000                     | +X          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *338.000                     | +X          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *368.000                     | +XX         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *398.000                     | +X          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *428.000                     | +XXX        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *458.000                     | +XX         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *488.000                     | +XXXXXXXX   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12        |
| *518.000                     | +XXX        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14        |
| *548.000                     | +XXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21        |
| *578.000                     | +XX         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *608.000                     | +XXXXX      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *638.000                     | +XXXX       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *668.000                     | +XXXXXXXX   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32        |
| *698.000                     | +X          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *728.000                     | +           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *LAST                        | +           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
|                              |             | 5  | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80        |

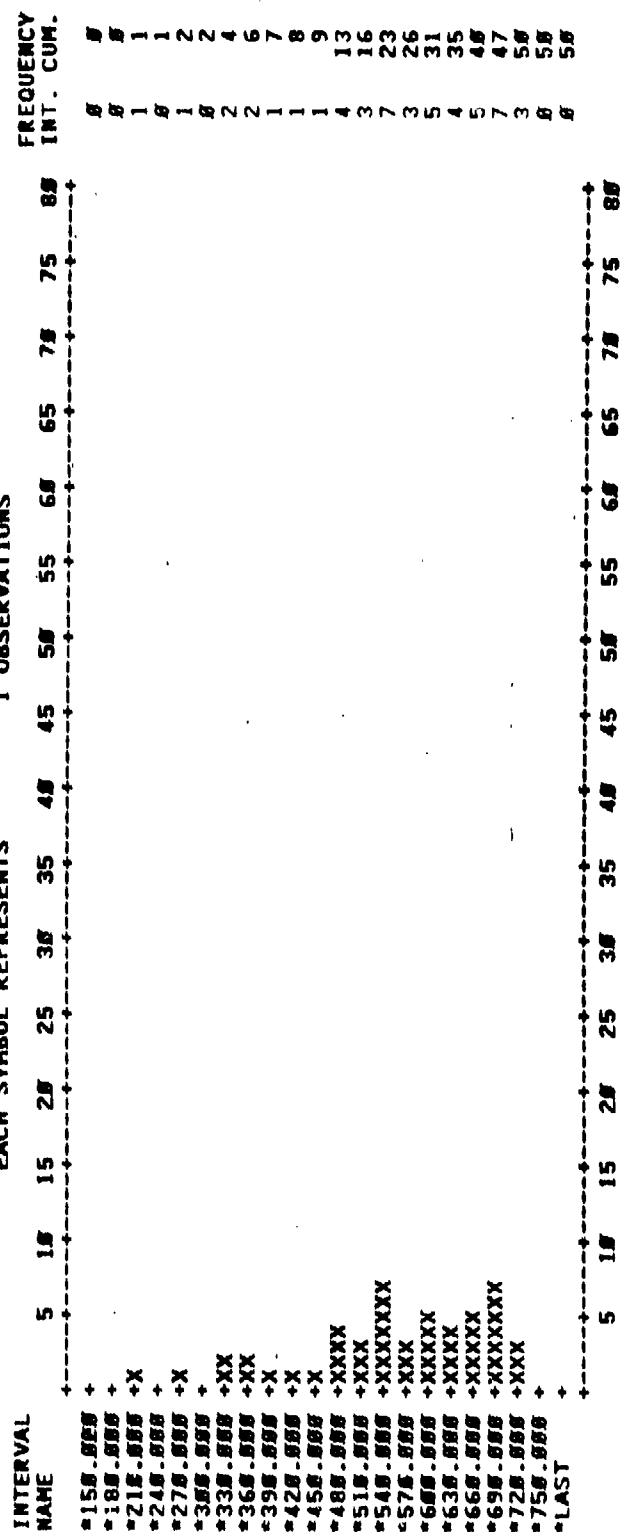
run17

| HISTOGRAM OF VARIABLE |         | 2 tsyn                 | SYMBOL COUNT |    | MEAN    | ST. DEV. | FREQUENCY<br>INT. CUM. |
|-----------------------|---------|------------------------|--------------|----|---------|----------|------------------------|
| INTERVAL              |         |                        | X            |    | 518.788 | 125.781  |                        |
| NAME                  |         | 5                      | 10           | 15 | 20      | 25       |                        |
|                       |         | EACH SYMBOL REPRESENTS |              |    |         |          |                        |
|                       |         | 5                      | 10           | 15 | 20      | 25       |                        |
| *125.000              | +       |                        |              |    |         |          | 0                      |
| *150.000              | +       |                        |              |    |         |          | 0                      |
| *180.000              | +X      |                        |              |    |         |          | 1                      |
| *210.000              | +       |                        |              |    |         |          | 0                      |
| *240.000              | +X      |                        |              |    |         |          | 1                      |
| *270.000              | +       |                        |              |    |         |          | 0                      |
| *300.000              | +XX     |                        |              |    |         |          | 2                      |
| *330.000              | +XX     |                        |              |    |         |          | 4                      |
| *360.000              | +       |                        |              |    |         |          | 2                      |
| *390.000              | +X      |                        |              |    |         |          | 0                      |
| *420.000              | +X      |                        |              |    |         |          | 2                      |
| *450.000              | +XXX    |                        |              |    |         |          | 1                      |
| *480.000              | +XXX    |                        |              |    |         |          | 3                      |
| *510.000              | +XXXXXX |                        |              |    |         |          | 12                     |
| *540.000              | +XXXX   |                        |              |    |         |          | 3                      |
| *570.000              | +XXXXXX |                        |              |    |         |          | 6                      |
| *600.000              | +XXX    |                        |              |    |         |          | 4                      |
| *630.000              | +XXXXXX |                        |              |    |         |          | 21                     |
| *660.000              | +XXXXXX |                        |              |    |         |          | 3                      |
| *690.000              | +XXXX   |                        |              |    |         |          | 34                     |
| *720.000              | +X      |                        |              |    |         |          | 6                      |
| *LAST                 | +       | 5                      | 10           | 15 | 20      | 25       | 6                      |
|                       |         |                        |              |    |         |          | 3                      |
|                       |         |                        |              |    |         |          | 4                      |
|                       |         |                        |              |    |         |          | 25                     |
|                       |         |                        |              |    |         |          | 21                     |
|                       |         |                        |              |    |         |          | 3                      |
|                       |         |                        |              |    |         |          | 34                     |
|                       |         |                        |              |    |         |          | 6                      |
|                       |         |                        |              |    |         |          | 40                     |
|                       |         |                        |              |    |         |          | 5                      |
|                       |         |                        |              |    |         |          | 45                     |
|                       |         |                        |              |    |         |          | 4                      |
|                       |         |                        |              |    |         |          | 1                      |
|                       |         |                        |              |    |         |          | 0                      |
|                       |         |                        |              |    |         |          | 5                      |
|                       |         |                        |              |    |         |          | 8                      |
|                       |         |                        |              |    |         |          | 75                     |
|                       |         |                        |              |    |         |          | 80                     |

run17

# HISTOGRAM OF VARIABLE 3 tsvh

MEAN 543.348 ST. DEV. 124.687  
EACH SYMBOL REPRESENTS 50 OBSERVATIONS



run18

| HISTOGRAM OF VARIABLE |  | 1        | tsv1 | SYMBOL COUNT |    | MEAN    | ST. DEV. | FREQUENCY |
|-----------------------|--|----------|------|--------------|----|---------|----------|-----------|
| INTERVAL              |  | 5        | 10   | 15           | 20 | 25      | 30       |           |
| NAME                  |  | 5        | 10   | 15           | 20 | 25      | 30       |           |
| *8.0000               |  | +XX      |      | X            |    | 319.868 |          | 2         |
| *35.0000              |  | +        |      | X            |    | 171.812 |          | 2         |
| *70.0000              |  | +XX      |      | X            |    | 1       |          | 2         |
| *105.0000             |  | +        |      | X            |    | 1       |          | 4         |
| *140.0000             |  | +X       |      | X            |    | 1       |          | 5         |
| *175.0000             |  | +XXX     |      | X            |    | 1       |          | 8         |
| *210.0000             |  | +XXX     |      | X            |    | 1       |          | 11        |
| *245.0000             |  | +XXXXXXX |      | X            |    | 1       |          | 25        |
| *280.0000             |  | +XXXXX   |      | X            |    | 1       |          | 28        |
| *315.0000             |  | +XXX     |      | X            |    | 1       |          | 33        |
| *350.0000             |  | +XX      |      | X            |    | 1       |          | 35        |
| *385.0000             |  | +XXX     |      | X            |    | 1       |          | 42        |
| *420.0000             |  | +XX      |      | X            |    | 1       |          | 43        |
| *455.0000             |  | +XXX     |      | X            |    | 1       |          | 44        |
| *490.0000             |  | +XX      |      | X            |    | 1       |          | 45        |
| *525.0000             |  | +X       |      | X            |    | 1       |          | 46        |
| *560.0000             |  | +X       |      | X            |    | 1       |          | 49        |
| *595.0000             |  | +X       |      | X            |    | 1       |          | 50        |
| *630.0000             |  | +X       |      | X            |    | 1       |          | 50        |
| *665.0000             |  | +XXX     |      | X            |    | 1       |          | 50        |
| *700.0000             |  | +X       |      | X            |    | 1       |          | 50        |
| *LAST                 |  | +        |      | X            |    | 1       |          | 50        |

run18

| HISTOGRAM OF VARIABLE  |   |    |    |    |    |    |    |    |    | 2 tsvn |    | SYMBOL COUNT |    | MEAN    |    | ST. DEV. |   | FREQUENCY |  |
|------------------------|---|----|----|----|----|----|----|----|----|--------|----|--------------|----|---------|----|----------|---|-----------|--|
| EACH SYMBOL REPRESENTS |   |    |    |    |    |    |    |    |    | X      |    | 58           |    | 345.748 |    | 171.846  |   | INT. CUM. |  |
| INTERVAL               | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50     | 55 | 60           | 65 | 70      | 75 | 80       |   |           |  |
| *0.0000                |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 1 | 1         |  |
| *35.0000               |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 1 | 2         |  |
| *70.0000               |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 2 | 4         |  |
| *105.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 2 | 4         |  |
| *140.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 4 | 4         |  |
| *175.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 3 | 7         |  |
| *210.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 2 | 9         |  |
| *245.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 5 | 14        |  |
| *280.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 6 | 20        |  |
| *315.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 6 | 26        |  |
| *350.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 3 | 29        |  |
| *385.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 1 | 30        |  |
| *420.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 3 | 33        |  |
| *455.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 3 | 36        |  |
| *490.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 4 | 40        |  |
| *525.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 4 | 42        |  |
| *560.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 2 | 44        |  |
| *595.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 2 | 44        |  |
| *630.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 4 | 44        |  |
| *665.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 2 | 46        |  |
| *700.0000              |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 2 | 48        |  |
| *LAST                  |   |    |    |    |    |    |    |    |    |        |    |              |    |         |    |          | 2 | 50        |  |
|                        | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50     | 55 | 60           | 65 | 70      | 75 | 80       |   |           |  |

run18

HISTOGRAM OF VARIABLE 3 tsvh

MEAN 371.485  
ST. DEV. 178.459  
1 OBSERVATIONS

SYMBOL COUNT  
X 58  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL          | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY | INT. CUM. |
|-------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|-----------|
| NAME              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |           |
| *0.00000 +        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         | 0         |
| *35.0000 +X       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 1         |
| *70.0000 +X       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 2         |
| *105.000 +        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         | 2         |
| *140.000 +XX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         | 4         |
| *175.000 +X       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 5         |
| *210.000 +XX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         | 7         |
| *245.000 +XX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         | 9         |
| *280.000 +XXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         | 17        |
| *315.000 +XXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         | 22        |
| *350.000 +XXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         | 27        |
| *385.000 +XX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         | 29        |
| *420.000 +XXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         | 32        |
| *455.000 +X       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 33        |
| *490.000 +XXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         | 36        |
| *525.000 +XXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         | 41        |
| *560.000 +XX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         | 43        |
| *595.000 +X       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 44        |
| *630.000 +        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         | 44        |
| *665.000 +XX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         | 46        |
| *700.000 +XXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         | 49        |
| *LAST +X          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         | 50        |

run19

| HISTOGRAM OF VARIABLE  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | I tsv1       |  |          |  |          |  |
|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--------------|--|----------|--|----------|--|
| EACH SYMBOL REPRESENTS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | SYMBOL COUNT |  | MEAN     |  | ST. DEV. |  |
| X                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 236          |  | 3741.914 |  | 158.895  |  |
| INTERVAL               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | FREQUENCY    |  | INT.     |  | CUM.     |  |
| NAME                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 8            |  | 2        |  | 3        |  |
| *3350.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2            |  | 1        |  | 3        |  |
| *3375.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3            |  | 4        |  | 6        |  |
| *3400.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4            |  | 10       |  | 14       |  |
| *3425.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4            |  | 14       |  | 16       |  |
| *3450.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2            |  | 6        |  | 22       |  |
| *3475.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 31           |  | 36       |  | 42       |  |
| *3500.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6            |  | 12       |  | 15       |  |
| *3525.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 17           |  | 92       |  | 98       |  |
| *3550.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 14           |  | 112      |  | 128      |  |
| *3575.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 16           |  | 148      |  | 168      |  |
| *3600.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 12           |  | 173      |  | 183      |  |
| *3625.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 12           |  | 195      |  | 207      |  |
| *3650.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3            |  | 218      |  | 215      |  |
| *3675.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5            |  | 218      |  | 222      |  |
| *3700.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4            |  | 224      |  | 225      |  |
| *3725.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2            |  | 227      |  | 229      |  |
| *3750.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3775.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3800.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3825.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3850.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3875.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3900.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3925.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3950.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *3975.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *4000.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *4025.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *4050.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *4075.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *4100.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *4125.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *4150.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |
| *LAST                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1            |  | 230      |  | 230      |  |

[illegible]

run19

HISTOGRAM OF VARIABLE 3 tsvh

MEAN 4638.847  
ST. DEV. 183.544  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL NAME | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|---------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| *4375.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *4400.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *4425.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *4450.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *4475.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12        |
| *4500.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7         |
| *4525.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *4550.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17        |
| *4575.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *4600.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25        |
| *4625.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *4650.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 36        |
| *4675.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12        |
| *4700.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48        |
| *4725.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21        |
| *4750.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 69        |
| *4775.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17        |
| *4800.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 86        |
| *4825.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22        |
| *4850.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 158       |
| *4875.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 38        |
| *4900.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15        |
| *LAST         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 153       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18        |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 171       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 16        |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 187       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15        |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 202       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 10        |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 212       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 218       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 222       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 224       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
|               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |

run28

| HISTOGRAM OF VARIABLE 1 tau1 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | MEAN     |           | ST. DEV.       |  |
|------------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------|-----------|----------------|--|
| EACH SYMBOL REPRESENTS       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2886.326 |           | 311.884        |  |
| SYMBOL COUNT                 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238      |           | 1 OBSERVATIONS |  |
| X                            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |           |                |  |
| INTERVAL                     | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80       | FREQUENCY |                |  |
| NAME                         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | INT. CUM. |                |  |
| *1988.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 8         |                |  |
| *2088.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 1         |                |  |
| *2188.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 1         |                |  |
| *2288.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 3         |                |  |
| *2388.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 7         |                |  |
| *2488.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 10        |                |  |
| *2588.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 13        |                |  |
| *2688.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 13        |                |  |
| *2788.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 9         |                |  |
| *2888.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 22        |                |  |
| *2988.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 37        |                |  |
| *3088.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 15        |                |  |
| *3188.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 37        |                |  |
| *3288.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 18        |                |  |
| *3388.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 55        |                |  |
| *3488.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 26        |                |  |
| *3588.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 81        |                |  |
| *3688.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 38        |                |  |
| *3788.88                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 111       |                |  |
| *LAST                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 32        |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 143       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 26        |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 169       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 28        |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 169       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 17        |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 286       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 14        |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 228       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 4         |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 224       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 4         |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 228       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 1         |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 229       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 1         |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 238       |                |  |
|                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          | 8         |                |  |

run28

| HISTOGRAM OF VARIABLE  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2   | tsvn | SYMBOL COUNT |         | MEAN      | ST. DEV. | FREQUENCY |    |    |    |    |    |    |    |    |    |   |   |
|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|------|--------------|---------|-----------|----------|-----------|----|----|----|----|----|----|----|----|----|---|---|
| EACH SYMBOL REPRESENTS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 238 | X    | 3278.548     | 385.638 | INT. CUM. |          |           |    |    |    |    |    |    |    |    |    |   |   |
| INTERVAL NAME          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5   | 10   | 15           | 20      | 25        | 30       | 35        | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | # |   |
| *2300.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    | 1  | # |   |
| *2400.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *2500.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *2600.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *2700.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *2800.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *2900.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3000.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3100.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3200.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3300.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3400.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3500.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3600.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3700.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3800.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *3900.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *4000.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *4100.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *4200.00               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |
| *LAST                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +   |      |              |         |           |          |           |    |    |    |    |    |    |    |    |    | 1 | # |

run2#

| HISTOGRAM OF VARIABLE |   |                        | 3 tsvh                                         |  |  | SYMBOL COUNT |  |  | MEAN           |  |  | ST. DEV. |  |  |
|-----------------------|---|------------------------|------------------------------------------------|--|--|--------------|--|--|----------------|--|--|----------|--|--|
| INTERVAL              |   |                        | EACH SYMBOL REPRESENTS                         |  |  | X            |  |  | 3695.298       |  |  | 293.693  |  |  |
| NAME                  |   |                        | 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 |  |  | 238          |  |  | 1 OBSERVATIONS |  |  |          |  |  |
| *2788.88              | + |                        |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *2888.88              | + | X                      |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *2988.88              | + |                        |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3088.88              | + | X                      |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3188.88              | + | XXX                    |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3288.88              | + | XXXXXXXX               |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3388.88              | + | XXXXXXXXXX             |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3488.88              | + | XXXXXXXXXXXX           |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3588.88              | + | XXXXXXXXXXXXXX         |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3688.88              | + | XXXXXXXXXXXXXXXX       |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3788.88              | + | XXXXXXXXXXXXXXXXXX     |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3888.88              | + | XXXXXXXXXXXXXXXXXXXX   |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *3988.88              | + | XXXXXXXXXXXXXXXXXXXXX  |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *4088.88              | + | XXXXXXXXXXXXXXXXXXXXXX |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *4188.88              | + | XXXXXXXXXXXXXXXXXXXXXX |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *4288.88              | + | XXXXXXXXXXXXXXXXXXXXXX |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *4388.88              | + | XXXXXXXXXXXXXXXXXXXXXX |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *4488.88              | + | XXXXXXXXXXXXXXXXXXXXXX |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *4588.88              | + | XXXXXXXXXXXXXXXXXXXXXX |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *4688.88              | + | XXXXXXXXXXXXXXXXXXXXXX |                                                |  |  |              |  |  |                |  |  |          |  |  |
| *LAST                 | + |                        |                                                |  |  |              |  |  |                |  |  |          |  |  |

FREQUENCY  
INT. CUM.

run21

| HISTOGRAM OF VARIABLE | 1           | tsv1 | SOURCE | COUNT | MEAN     | ST. DEV. |
|-----------------------|-------------|------|--------|-------|----------|----------|
|                       |             |      | X      | 23    | 1897.621 | 369.323  |
| INTERVAL              | 5           | 15   | 25     | 35    | 45       | 55       |
| NAME                  | 5           | 15   | 25     | 35    | 45       | 55       |
| *700.000              | +           |      |        |       |          |          |
| *800.000              | +X          |      |        |       |          |          |
| *900.000              | +X          |      |        |       |          |          |
| *1000.000             | +X          |      |        |       |          |          |
| *1100.000             | +X          |      |        |       |          |          |
| *1200.000             | +XXXX       |      |        |       |          |          |
| *1300.000             | +XXXXX      |      |        |       |          |          |
| *1400.000             | +XXXXXX     |      |        |       |          |          |
| *1500.000             | +XXXXXXXX   |      |        |       |          |          |
| *1600.000             | +XXXXXXXXXX |      |        |       |          |          |
| *1700.000             | +XXXXXXXXXX |      |        |       |          |          |
| *1800.000             | +XXXXXXXXXX |      |        |       |          |          |
| *1900.000             | +XXXXXXXXXX |      |        |       |          |          |
| *2000.000             | +XXXXXXXXXX |      |        |       |          |          |
| *2100.000             | +XXXXXXXXXX |      |        |       |          |          |
| *2200.000             | +XXXXXXXXXX |      |        |       |          |          |
| *2300.000             | +XXXXXXXXXX |      |        |       |          |          |
| *2400.000             | +XXXXXXXXXX |      |        |       |          |          |
| *2500.000             | +XXXXXX     |      |        |       |          |          |
| *2600.000             | +XXXXXX     |      |        |       |          |          |
| *2700.000             | +XX         |      |        |       |          |          |
| *2800.000             | +X          |      |        |       |          |          |
| *2900.000             | +           |      |        |       |          |          |
| *3000.000             | +XX         |      |        |       |          |          |
| *LAST                 | +           |      |        |       |          |          |

FREQUENCY  
INT. CUM.

5 15 25 35 45 55 65 75 85

run21

| HISTOGRAM OF VARIABLE  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 tsyn          |  | SYMBOL |          | COUNT | MEAN    |    | ST. DEV.  |    | FREQUENCY |    |    |    |    |    |    |     |   |   |
|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------|--|--------|----------|-------|---------|----|-----------|----|-----------|----|----|----|----|----|----|-----|---|---|
| EACH SYMBOL REPRESENTS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X               |  | 238    | 2341.948 |       | 373.811 |    | INT. CUM. |    |           |    |    |    |    |    |    |     |   |   |
| INTERVAL               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | NAME            |  | 5      | 18       | 15    | 28      | 25 | 38        | 35 | 48        | 45 | 58 | 55 | 68 | 78 | 75 | 88  |   |   |
| + *1188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +               |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    |     |   | 8 |
| + *1288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +               |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    |     |   | 1 |
| + *1388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +               |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    |     | 1 |   |
| + *1488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XX             |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    |     | 3 |   |
| + *1588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +               |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 2   |   |   |
| + *1688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XX             |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 4   |   |   |
| + *1788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 3   |   |   |
| + *1888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXX          |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 7   |   |   |
| + *1988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXX     |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 4   |   |   |
| + *2088.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 11  |   |   |
| + *2188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 5   |   |   |
| + *2288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 16  |   |   |
| + *2388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 27  |   |   |
| + *2488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 43  |   |   |
| + *2588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 56  |   |   |
| + *2688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 13  |   |   |
| + *2788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 76  |   |   |
| + *2888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 25  |   |   |
| + *2988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 181 |   |   |
| + *3088.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 33  |   |   |
| + *3188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 134 |   |   |
| + *3288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 23  |   |   |
| + *3388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 157 |   |   |
| + *3488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 21  |   |   |
| + *3588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 178 |   |   |
| + *3688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 11  |   |   |
| + *3788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 189 |   |   |
| + *3888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 18  |   |   |
| + *3988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 287 |   |   |
| + *4088.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXX          |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 5   |   |   |
| + *4188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXX          |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 212 |   |   |
| + *4288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXXXXXXXXXXXX |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 18  |   |   |
| + *4388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 222 |   |   |
| + *4488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 4   |   |   |
| + *4588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 226 |   |   |
| + *4688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 2   |   |   |
| + *4788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 228 |   |   |
| + *4888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *4988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 1   |   |   |
| + *5088.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 229 |   |   |
| + *5188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 1   |   |   |
| + *5288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 238 |   |   |
| + *5388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *5488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 238 |   |   |
| + *5588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *5688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *5788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *5888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *5988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6088.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *6988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7088.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *7988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8088.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *8988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9088.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9188.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9288.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9388.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9488.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9588.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9688.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9788.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9888.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *9988.88             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10088.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10188.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10288.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10388.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10488.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10588.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10688.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10788.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10888.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *10988.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11088.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11188.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11288.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11388.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11488.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11588.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11688.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11788.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11888.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *11988.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12088.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12188.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12288.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12388.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12488.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12588.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12688.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12788.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12888.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *12988.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13088.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13188.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13288.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13388.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13488.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13588.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13688.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13788.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +XXXX           |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    | 8   |   |   |
| + *13888.88            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |  |        |          |       |         |    |           |    |           |    |    |    |    |    |    |     |   |   |

FREQUENCY  
INT. CUM.

8 1 1 1 1 3 3 4 4 7 4 11 16 11 27 43 13 56 28 76 25 181 33 134 23 157 21 178 11 189 18 287 5 212 18 222 4 226 2 228 8 228 1 229 1 238 8 238

run21

| HISTOGRAM OF VARIABLE |    |    | 3 tswh                 |    |    | MEAN     |    |    | ST. DEV.       |  |     |
|-----------------------|----|----|------------------------|----|----|----------|----|----|----------------|--|-----|
| INTERVAL              |    |    | EACH SYMBOL REPRESENTS |    |    | 2786.587 |    |    | 364.388        |  |     |
| NAME                  |    |    | X                      |    |    | 238      |    |    | 1 OBSERVATIONS |  |     |
| 5                     | 15 | 25 | 35                     | 45 | 55 | 65       | 75 | 85 | FREQUENCY      |  |     |
| INT. CUM.             |    |    |                        |    |    |          |    |    | INT. CUM.      |  |     |
| *1688.88              |    |    |                        |    |    |          |    |    | 8              |  | 8   |
| *1788.88              |    |    |                        |    |    |          |    |    | 1              |  | 1   |
| *1888.88              |    |    |                        |    |    |          |    |    | 1              |  | 2   |
| *1988.88              |    |    |                        |    |    |          |    |    | 1              |  | 3   |
| *2088.88              |    |    |                        |    |    |          |    |    | 1              |  | 4   |
| *2188.88              |    |    |                        |    |    |          |    |    | 4              |  | 8   |
| *2288.88              |    |    |                        |    |    |          |    |    | 4              |  | 12  |
| *2388.88              |    |    |                        |    |    |          |    |    | 9              |  | 21  |
| *2488.88              |    |    |                        |    |    |          |    |    | 13             |  | 34  |
| *2588.88              |    |    |                        |    |    |          |    |    | 13             |  | 47  |
| *2688.88              |    |    |                        |    |    |          |    |    | 28             |  | 67  |
| *2788.88              |    |    |                        |    |    |          |    |    | 19             |  | 86  |
| *2888.88              |    |    |                        |    |    |          |    |    | 38             |  | 116 |
| *2988.88              |    |    |                        |    |    |          |    |    | 28             |  | 144 |
| *3088.88              |    |    |                        |    |    |          |    |    | 38             |  | 174 |
| *3188.88              |    |    |                        |    |    |          |    |    | 9              |  | 183 |
| *3288.88              |    |    |                        |    |    |          |    |    | 18             |  | 201 |
| *3388.88              |    |    |                        |    |    |          |    |    | 18             |  | 211 |
| *3488.88              |    |    |                        |    |    |          |    |    | 7              |  | 218 |
| *3588.88              |    |    |                        |    |    |          |    |    | 7              |  | 225 |
| *3688.88              |    |    |                        |    |    |          |    |    | 3              |  | 228 |
| *3788.88              |    |    |                        |    |    |          |    |    | 8              |  | 228 |
| *3888.88              |    |    |                        |    |    |          |    |    | 1              |  | 229 |
| *LAST                 |    |    |                        |    |    |          |    |    | 1              |  | 238 |

run22

| HISTOGRAM OF VARIABLE |             | I tsv1                                         |  | SYMBOL COUNT |  | MEAN     |  | ST. DEV.     |  | FREQUENCY |     |
|-----------------------|-------------|------------------------------------------------|--|--------------|--|----------|--|--------------|--|-----------|-----|
| INTERVAL              |             | EACH SYMBOL REPRESENTS                         |  | X            |  | 4866.184 |  | 168.771      |  | INT. CUM. |     |
| NAME                  |             | 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 |  | 230          |  | 1        |  | OBSERVATIONS |  |           |     |
| *3550.00              | +           |                                                |  |              |  |          |  |              |  | 0         | 0   |
| *3600.00              | +X          |                                                |  |              |  |          |  |              |  | 1         | 1   |
| *3650.00              | +           |                                                |  |              |  |          |  |              |  | 0         | 1   |
| *3700.00              | +XX         |                                                |  |              |  |          |  |              |  | 2         | 3   |
| *3750.00              | +XX         |                                                |  |              |  |          |  |              |  | 2         | 5   |
| *3800.00              | +XXXXXX     |                                                |  |              |  |          |  |              |  | 7         | 12  |
| *3850.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 13        | 25  |
| *3900.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 12        | 37  |
| *3950.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 19        | 56  |
| *4000.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 24        | 80  |
| *4050.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 18        | 98  |
| *4100.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 28        | 126 |
| *4150.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 29        | 155 |
| *4200.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 29        | 184 |
| *4250.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 21        | 205 |
| *4300.00              | +XXXXXXXXXX |                                                |  |              |  |          |  |              |  | 10        | 215 |
| *4350.00              | +XXXXXX     |                                                |  |              |  |          |  |              |  | 8         | 223 |
| *4400.00              | +XX         |                                                |  |              |  |          |  |              |  | 2         | 225 |
| *4450.00              | +XXXX       |                                                |  |              |  |          |  |              |  | 4         | 229 |
| *4500.00              | +X          |                                                |  |              |  |          |  |              |  | 1         | 230 |
| *4550.00              | +           |                                                |  |              |  |          |  |              |  | 0         | 230 |
| *4600.00              | +           |                                                |  |              |  |          |  |              |  | 0         | 230 |
| *LAST                 | +           |                                                |  |              |  |          |  |              |  | 0         | 230 |

run22

| HISTOGRAM OF VARIABLE |             | 2                      | tsvn | SYMBOL |  | COUNT | MEAN     | ST.DEV. | FREQUENCY |  |
|-----------------------|-------------|------------------------|------|--------|--|-------|----------|---------|-----------|--|
| INTERVAL              |             | EACH SYMBOL REPRESENTS |      | X      |  | 238   | 4499.586 | 129.867 | INT. CUM. |  |
| NAME                  |             | 5                      |      | 18     |  | 15    | 28       | 35      | 88        |  |
| *4188.88              | +           |                        |      |        |  |       |          |         |           |  |
| *4158.88              | +X          |                        |      |        |  |       |          |         |           |  |
| *4288.88              | +X          |                        |      |        |  |       |          |         |           |  |
| *4258.88              | +XX         |                        |      |        |  |       |          |         |           |  |
| *4388.88              | +XXXXXX     |                        |      |        |  |       |          |         |           |  |
| *4358.88              | +XXXXXXXXXX |                        |      |        |  |       |          |         |           |  |
| *4488.88              | +XXXXXXXXXX |                        |      |        |  |       |          |         |           |  |
| *4458.88              | +XXXXXXXXXX |                        |      |        |  |       |          |         |           |  |
| *4588.88              | +XXXXXXXXXX |                        |      |        |  |       |          |         |           |  |
| *4558.88              | +XXXXXXXXXX |                        |      |        |  |       |          |         |           |  |
| *4688.88              | +XXXXXXXXXX |                        |      |        |  |       |          |         |           |  |
| *4658.88              | +XXXXXXXXXX |                        |      |        |  |       |          |         |           |  |
| *4788.88              | +XXXXXXXXXX |                        |      |        |  |       |          |         |           |  |
| *4758.88              | +XXXXX      |                        |      |        |  |       |          |         |           |  |
| *4888.88              | +XXXX       |                        |      |        |  |       |          |         |           |  |
| *4858.88              | +XXX        |                        |      |        |  |       |          |         |           |  |
| *LAST                 | +           |                        |      |        |  |       |          |         |           |  |

run22

# HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST. DEV.  
X 23 4858.672 186.729  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *4500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *4600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *4650.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *4700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *4750.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15        |
| *4800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 23        |
| *4850.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19        |
| *4900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 42        |
| *4950.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 31        |
| *5000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 73        |
| *5050.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 36        |
| *5100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 189       |
| *5150.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 46        |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 155       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 34        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 189       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 23        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 212       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 223       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 228       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 230       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |

run23

| HISTOGRAM OF VARIABLE |               | 1 tsyl                                         |  | SYMBOL COUNT |  | MEAN           |  | ST. DEV. |  |
|-----------------------|---------------|------------------------------------------------|--|--------------|--|----------------|--|----------|--|
| INTERVAL              |               | EACH SYMBOL REPRESENTS                         |  | X            |  | 2994.548       |  | 347.798  |  |
| NAME                  |               | 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 |  | 238          |  | 1 OBSERVATIONS |  |          |  |
| *1900.00              | +             |                                                |  |              |  |                |  |          |  |
| *2000.00              | +X            |                                                |  |              |  |                |  |          |  |
| *2100.00              | +X            |                                                |  |              |  |                |  |          |  |
| *2200.00              | +             |                                                |  |              |  |                |  |          |  |
| *2300.00              | +XXXXXX       |                                                |  |              |  |                |  |          |  |
| *2400.00              | +XXXXX        |                                                |  |              |  |                |  |          |  |
| *2500.00              | +XXXX         |                                                |  |              |  |                |  |          |  |
| *2600.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *2700.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *2800.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *2900.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *3000.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *3100.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *3200.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *3300.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *3400.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *3500.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *3600.00              | +XXXXXXXXXXXX |                                                |  |              |  |                |  |          |  |
| *3700.00              | +XXXX         |                                                |  |              |  |                |  |          |  |
| *3800.00              | +XXX          |                                                |  |              |  |                |  |          |  |
| *LAST                 | +X            |                                                |  |              |  |                |  |          |  |

| FREQUENCY | INT. CUM. |
|-----------|-----------|
| 5         | 5         |
| 1         | 1         |
| 1         | 2         |
| 2         | 4         |
| 8         | 12        |
| 6         | 18        |
| 5         | 23        |
| 13        | 36        |
| 4         | 40        |
| 17        | 57        |
| 13        | 70        |
| 38        | 108       |
| 13        | 121       |
| 43        | 164       |
| 22        | 186       |
| 65        | 251       |
| 22        | 273       |
| 87        | 360       |
| 28        | 388       |
| 115       | 503       |
| 24        | 527       |
| 139       | 666       |
| 25        | 691       |
| 164       | 855       |
| 21        | 876       |
| 185       | 1061      |
| 28        | 1089      |
| 295       | 1384      |
| 8         | 1392      |
| 213       | 1605      |
| 9         | 1614      |
| 222       | 1836      |
| 4         | 1840      |
| 226       | 2066      |
| 3         | 2069      |
| 229       | 2298      |
| 1         | 2300      |

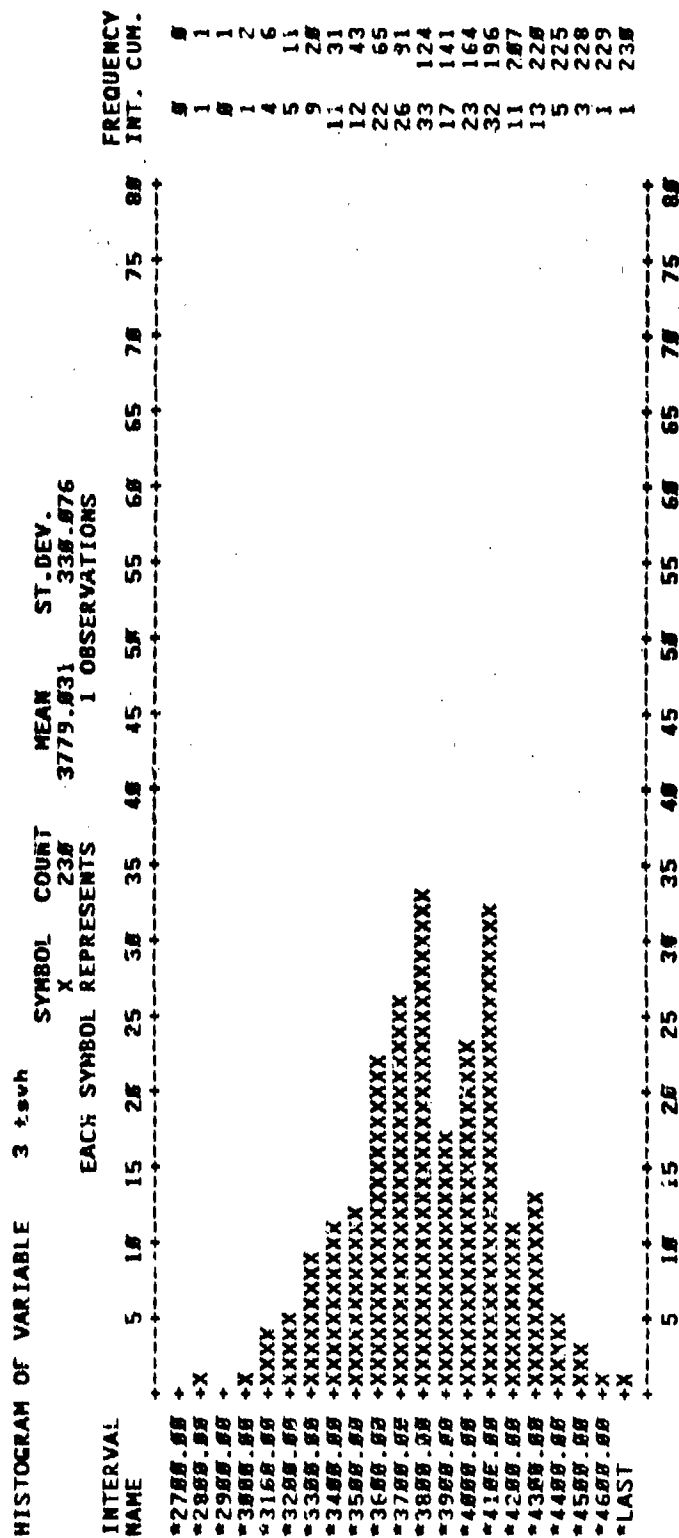
run23

| HISTOGRAM OF VARIABLE 2 tsun  |   |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------|---|--------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| EACH SYMBOL REPRESENTS        |   |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| SYMBOL COUNT                  |   |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| X 238                         |   |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| MEAN 3488.666 ST.DEV. 341.889 |   |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 1 OBSERVATIONS                |   |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| INTERVAL                      | 5 | 10           | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| NAME                          |   |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2388.88                      | + |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2488.88                      | + | X            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2588.88                      | + |              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2688.88                      | + | X            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2788.88                      | + | XXXX         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2888.88                      | + | XXXXXX       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2988.88                      | + | XXX          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3088.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3188.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3288.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3388.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3488.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3588.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3688.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3788.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3888.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3988.88                      | + | XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *4088.88                      | + | XXXXXX       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *4188.88                      | + | XXXX         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *4288.88                      | + | XX           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *LAST                         | + | X            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

| FREQUENCY | 8 | 1 | 1  | 1  | 2  | 6  | 12 | 15 | 15 | 12 | 21 | 28  | 32  | 28  | 26  | 28  | 24  | 18  | 8   | 4   | 2   | 1   |
|-----------|---|---|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| INT. CUM. | 8 | 9 | 10 | 11 | 13 | 19 | 31 | 46 | 61 | 73 | 94 | 122 | 154 | 182 | 208 | 232 | 256 | 274 | 282 | 286 | 288 | 289 |

FREQUENCY  
INT. CUM.  
# 1 1 1 1 2 6 12 3 15 15 38 12 42 21 63 28 83 32 115 28 135 26 161 28 181 24 285 18 215 8 223 4 227 2 229 1 238

run23



run24

HISTOGRAM OF VARIABLE 1 tsc1

SYMBOL COUNT MEAN ST.DEV.  
X 238 1955.817 414.892  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL<br>NAME      | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |     |
|-----------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| *700.000 +X           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *800.000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *900.000 +X           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2   |
| *1000.000 +X          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *1100.000 +XX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4   |
| *1200.000 +XX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2   |
| *1300.000 +XX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6   |
| *1400.000 +XXXXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *1500.000 +XXXXXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7   |
| *1600.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15  |
| *1700.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *1800.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 23  |
| *1900.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *2000.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 31  |
| *2100.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17  |
| *2200.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48  |
| *2300.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 9   |
| *2400.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 57  |
| *2500.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 20  |
| *2600.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 77  |
| *2700.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 97  |
| *2800.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32  |
| *2900.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 129 |
| *3000.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 20  |
| *3100.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 149 |
| *3200.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24  |
| *3300.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 173 |
| *3400.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13  |
| *3500.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 186 |
| *3600.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15  |
| *3700.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 201 |
| *3800.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7   |
| *3900.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 208 |
| *4000.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6   |
| *4100.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 214 |
| *4200.000 +XXXXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 9   |
| *4300.000 +XXXXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 223 |
| *4400.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *4500.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 226 |
| *4600.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2   |
| *4700.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 228 |
| *4800.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0   |
| *4900.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 228 |
| *5000.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *5100.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229 |
| *5200.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *5300.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 230 |
| *LAST                 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0   |

run24

| HISTOGRAM OF VARIABLE |  |  |  |  |  |  |  |  |  | 2 tsvn                 |  | SYMBOL COUNT |  | MEAN |  | ST.DEV.  |  | FREQUENCY |         |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| INTERVAL              |  |  |  |  |  |  |  |  |  | EACH SYMBOL REPRESENTS |  | X            |  | 238  |  | 2341.388 |  |           | 417.882 |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NAME                  |  |  |  |  |  |  |  |  |  | 5                      |  | 10           |  | 15   |  | 20       |  | 25        |         | 30 |  | 35 |  | 40 |  | 45 |  | 50 |  | 55 |  | 60 |  | 65 |  | 70 |  | 75 |  | 80 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *1000.00              |  |  |  |  |  |  |  |  |  | +                      |  |              |  |      |  |          |  |           |         |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

run24

HISTOGRAM OF VARIABLE 3 tsyh

SYMBOL COUNT MEAN ST.DEV.  
X 238 2734.445 489.852  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL NAME | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80  |
|---------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| *1400.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0   |
| *1500.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *1600.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *1700.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *1800.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *1900.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5   |
| *2000.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 10  |
| *2100.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14  |
| *2200.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21  |
| *2300.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 34  |
| *2400.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 46  |
| *2500.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 62  |
| *2600.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 78  |
| *2700.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 103 |
| *2800.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 133 |
| *2900.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 154 |
| *3000.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 176 |
| *3100.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 185 |
| *3200.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 201 |
| *3300.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 210 |
| *3400.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 217 |
| *3500.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 224 |
| *3600.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 227 |
| *3700.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 228 |
| *3800.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229 |
| *3900.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 230 |
| *LAST         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 230 |

run25

| HISTOGRAM OF VARIABLE |             | 1 tsv1                 |    | SYMBOL COUNT |    | MEAN     |    | ST.DEV. |    | FREQUENCY |    |    |    |    |    |     |
|-----------------------|-------------|------------------------|----|--------------|----|----------|----|---------|----|-----------|----|----|----|----|----|-----|
| INTERVAL              |             | EACH SYMBOL REPRESENTS |    | X            |    | 4384.985 |    | 166.295 |    | INT. CUM. |    |    |    |    |    |     |
| NAME                  |             | 1 OBSERVATIONS         |    |              |    |          |    |         |    |           |    |    |    |    |    |     |
| 5                     | 10          | 15                     | 20 | 25           | 30 | 35       | 40 | 45      | 50 | 55        | 60 | 65 | 70 | 75 | 80 |     |
| *3750.00              | +           |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 1   |
| *3800.00              | +X          |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 1   |
| *3850.00              | +           |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 1   |
| *3900.00              | +X          |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 2   |
| *3950.00              | +X          |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 1   |
| *4000.00              | +XXX        |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 3   |
| *4050.00              | +XXXX       |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 7   |
| *4100.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 11  |
| *4150.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 18  |
| *4200.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 27  |
| *4250.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 40  |
| *4300.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 61  |
| *4350.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 81  |
| *4400.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 107 |
| *4450.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 139 |
| *4500.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 158 |
| *4550.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 186 |
| *4600.00              | +XXXXXXXXXX |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 208 |
| *4650.00              | +XXXXXX     |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 216 |
| *4700.00              | +XXXX       |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 223 |
| *LAST                 | +           |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 226 |
|                       |             |                        |    |              |    |          |    |         |    |           |    |    |    |    |    | 230 |

run25

HISTOGRAM OF VARIABLE 2 tsvn

SYMBOL COUNT MEAN ST. DEV.  
X 238 4788.594 135.241  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL  | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|-----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *4250.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *4300.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *4350.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *4400.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *4450.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *4500.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *4550.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *4600.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7         |
| *4650.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *4700.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18        |
| *4750.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17        |
| *4800.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 35        |
| *4850.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22        |
| *4900.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 57        |
| *4950.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25        |
| *5000.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 82        |
| *5050.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 26        |
| *5100.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32        |
| *5150.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 148       |
| *5200.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 36        |
| *5250.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 176       |
| *5300.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 27        |
| *5350.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 283       |
| *5400.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14        |
| *5450.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 217       |
| *5500.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *5550.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 223       |
| *5600.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *5650.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 228       |
| *5700.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *5750.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *5800.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *5850.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *5900.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *5950.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6000.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6050.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6100.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6150.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6200.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6250.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6300.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6350.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6400.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6450.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6500.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6550.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6600.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6650.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6700.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6750.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6800.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6850.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6900.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *6950.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7000.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7050.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7100.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7150.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7200.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7250.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7300.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7350.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7400.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7450.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7500.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7550.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7600.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7650.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7700.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7750.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7800.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7850.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7900.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *7950.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8000.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8050.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8100.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8150.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8200.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8250.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8300.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8350.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8400.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8450.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8500.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8550.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8600.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8650.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8700.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8750.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8800.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8850.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8900.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *8950.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9000.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9050.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9100.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9150.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9200.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9250.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9300.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9350.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9400.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9450.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9500.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9550.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9600.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9650.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9700.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9750.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9800.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9850.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9900.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *9950.00  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *10000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *LAST     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |

run25

| HISTOGRAM OF VARIABLE |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3 tsvh                 |  | SYMBOL         |  | COUNT    | MEAN |         | ST.DEV. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------------------------|--|----------------|--|----------|------|---------|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X                      |  | 230            |  | 5025.857 |      | 113.463 |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | EACH SYMBOL REPRESENTS |  | 1 OBSERVATIONS |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| INTERVAL              | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NAME                  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *4650.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *4700.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *4750.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *4800.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *4850.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *4900.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *4950.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *5000.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *5050.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *5100.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *5150.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *5200.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *5250.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *5300.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *LAST                 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |  |          |      |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

MEAN 5025.857  
ST.DEV. 113.463  
OBSERVATIONS 1

FREQUENCY  
INT. CUM.  
0 1 1 1 1 5 12 17 18 35 28 63 29 92 32 124 46 170 34 204 13 217 6 223 7 230 0 230

run26

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST. DEV.  
X 238 3129.348 376.894  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *2000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *2100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *2200.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *2300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *2400.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *2500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *2600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 9         |
| *2700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13        |
| *2800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *2900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18        |
| *3000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *3100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13        |
| *3200.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 31        |
| *3300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *3400.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 42        |
| *3500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19        |
| *3600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 61        |
| *3700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21        |
| *3800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 92        |
| *3900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 27        |
| *4000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 109       |
| *4100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18        |
| *4200.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 127       |
| *4300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21        |
| *4400.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 148       |
| *4500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28        |
| *4600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 176       |
| *4700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18        |
| *4800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 194       |
| *4900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13        |
| *5000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 287       |
| *5100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *5200.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 215       |
| *5300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *5400.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 223       |
| *5500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *5600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 225       |
| *5700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *5800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
| *5900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *6000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |

## HISTOGRAM OF VARIABLE 2 tsvn

| SYMBOL | COUNT | MEAN     | ST. DEV. |
|--------|-------|----------|----------|
| X      | 238   | 3588.585 | 378.232  |

EACH SYMBOL REPRESENTS 1 OBSERVATIONS

[illegible]

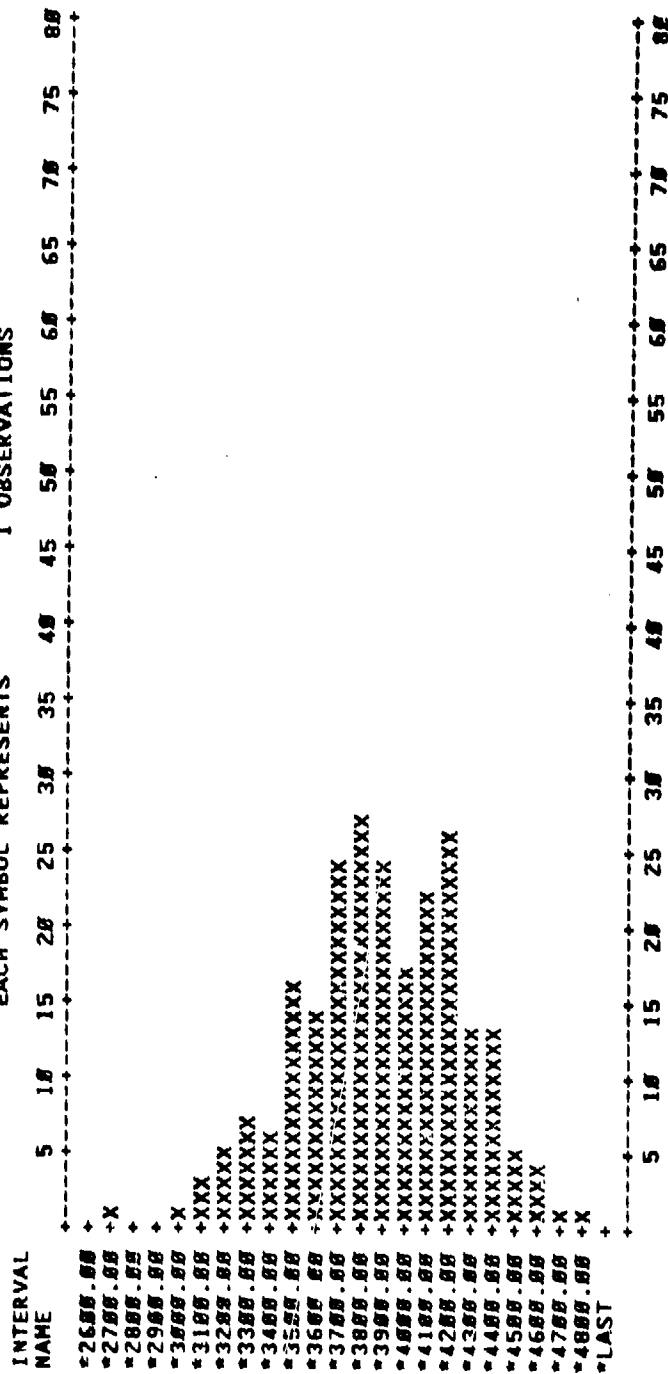
run26

HISTOGRAM OF VARIABLE 3 tsvh

MEAN 3850.183  
ST. DEV. 360.397  
1 OBSERVATIONS

SYMBOL COUNT  
X 230  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.



run27

| HISTOGRAM OF VARIABLE  |             |    |    |    |    |    |    |    |    | I tsv1 | SYMBOL | COUNT | MEAN           | ST. DEV. | FREQUENCY |    |     |
|------------------------|-------------|----|----|----|----|----|----|----|----|--------|--------|-------|----------------|----------|-----------|----|-----|
|                        |             |    |    |    |    |    |    |    |    |        | X      | 238   | 1981.687       | 452.212  | INT. CUM. |    |     |
| EACH SYMBOL REPRESENTS |             |    |    |    |    |    |    |    |    |        |        |       | I OBSERVATIONS |          |           |    |     |
| INTERVAL               | 5           | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50     | 55     | 60    | 65             | 70       | 75        | 80 |     |
| NAME                   |             |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    |     |
| +688.888               | +           |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 8   |
| +758.888               | +X          |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 1   |
| +908.888               | +XXX        |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 3   |
| +1058.888              | +XX         |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 2   |
| +1208.888              | +XXX        |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 6   |
| +1358.888              | +XXXXXXX    |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 9   |
| +1508.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 18  |
| +1658.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 14  |
| +1808.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 33  |
| +1958.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 21  |
| +2108.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 18  |
| +2258.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 72  |
| +2408.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 38  |
| +2558.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 182 |
| +2708.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 42  |
| +2858.888              | +XXXXXXXXXX |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 144 |
| +3008.888              | +XXXX       |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 29  |
| +3158.888              | +X          |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 173 |
| +3308.888              | +X          |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 15  |
| +LAST                  |             |    |    |    |    |    |    |    |    |        |        |       |                |          |           |    | 188 |

run27

| HISTOGRAM OF VARIABLE  |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2 tsvn         |     | SYMBOL |  | COUNT | MEAN     | ST.DEV. |  |  |  |  |  |  |  |  |  |  | FREQUENCY |
|------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------------|-----|--------|--|-------|----------|---------|--|--|--|--|--|--|--|--|--|--|-----------|
| INTERVAL               |    |    |    |    |    |    |    |    |    |    |    |    |    |    | NAME           |     | X      |  | 238   | 2341.339 | 454.796 |  |  |  |  |  |  |  |  |  |  | INT. CUM. |
| EACH SYMBOL REPRESENTS |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 OBSERVATIONS |     |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| 5                      | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80             |     |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *900.000               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 0   |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *1050.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 1   |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *1200.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 2   |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *1350.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 4   |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *1500.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 7   |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *1650.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 17  |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *1800.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 27  |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *1950.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 48  |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *2100.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 61  |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *2250.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 98  |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *2400.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 129 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *2550.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 159 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *2700.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 179 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *2850.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 203 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *3000.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 211 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *3150.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 223 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *3300.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 227 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *3450.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 229 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *3600.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 229 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *3750.00               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 238 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |
| *LAST                  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                | 238 |        |  |       |          |         |  |  |  |  |  |  |  |  |  |  |           |

run27

HISTOGRAM OF VARIABLE 3 tswh MEAN ST. DEV.  
 2722.617 447.448  
 EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL                  | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|---------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME                      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *1200.00 +                |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *1350.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *1500.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *1650.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *1800.00 +XXX             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *1950.00 +XXXX            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *2100.00 +XXXXX           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *2250.00 +XXXXXXXX        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 20        |
| *2400.00 +XXXXXXXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 36        |
| *2550.00 +XXXXXXXXXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 53        |
| *2700.00 +XXXXXXXXXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 76        |
| *2850.00 +XXXXXXXXXXXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 114       |
| *3000.00 +XXXXXXXXXXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 144       |
| *3150.00 +XXXXXXXXXXXXXX  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 177       |
| *3300.00 +XXXXXXXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 191       |
| *3450.00 +XXXXXXXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *3600.00 +XXXXX           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 220       |
| *3750.00 +XXX             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 225       |
| *3900.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *4050.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 228       |
| *LAST                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
|                           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 230       |
|                           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 230       |

run28

HISTOGRAM OF VARIABLE 1 tsv1

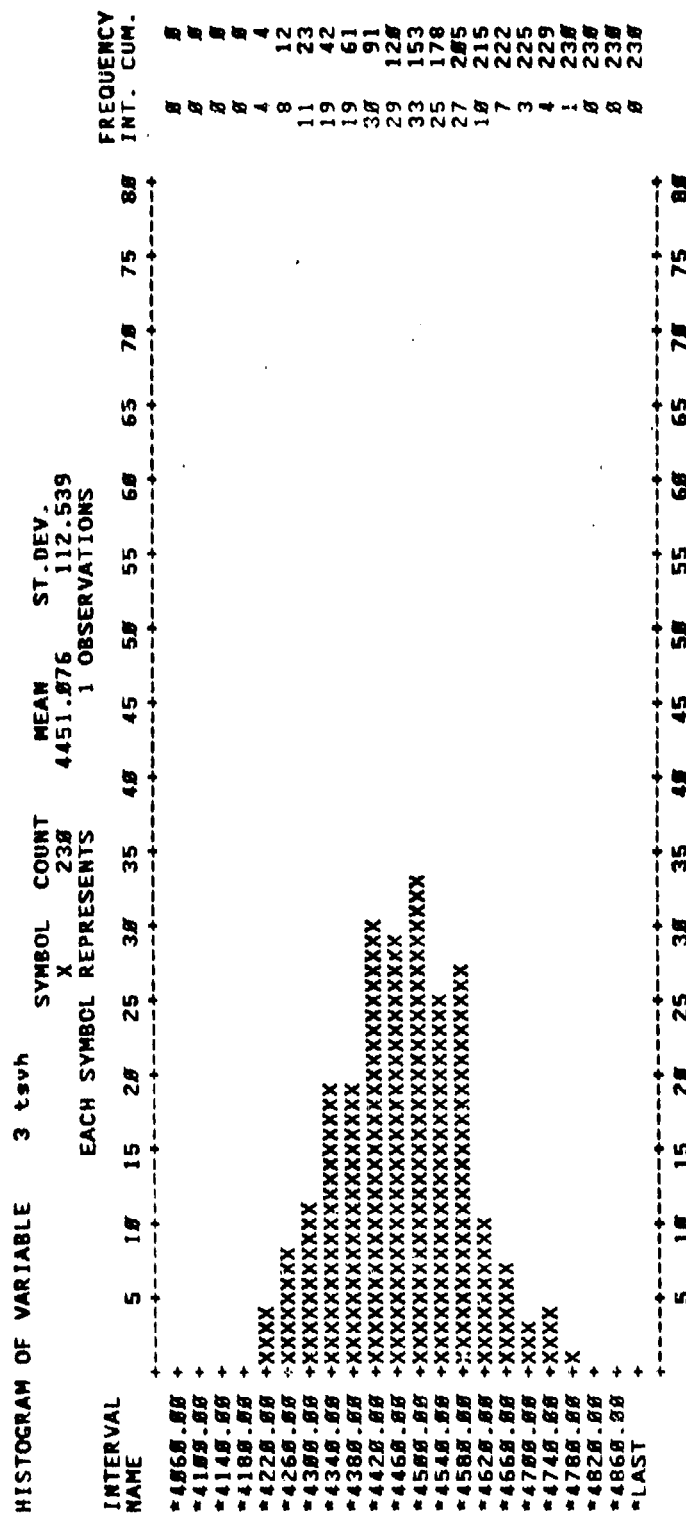
SYMBOL COUNT MEAN ST. DEV.  
X 238 3981.438 148.361  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *3548.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *3580.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *3620.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *3660.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *3700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *3740.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *3780.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *3820.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7         |
| *3860.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13        |
| *3900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *3940.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24        |
| *3980.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *4020.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 35        |
| *4060.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14        |
| *4100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 49        |
| *4140.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 20        |
| *4180.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21        |
| *4220.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 90        |
| *4260.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19        |
| *4300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 159       |
| *4340.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 29        |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 138       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 155       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 177       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 202       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 210       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 218       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 224       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 225       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |

run28

| HISTOGRAM OF VARIABLE             |  | 2                      | tsun | SYMBOL |    | COUNT        | MEAN     | ST.DEV. | FREQUENCY |
|-----------------------------------|--|------------------------|------|--------|----|--------------|----------|---------|-----------|
| NAME                              |  | 5                      | 10   | 15     | 20 | 25           | 30       | 35      |           |
|                                   |  | EACH SYMBOL REPRESENTS |      | X      |    | 230          | 4237.800 | 127.196 | INT. CUM. |
|                                   |  |                        |      |        |    | OBSERVATIONS |          |         |           |
| *3820.00 +                        |  |                        |      |        |    |              |          |         | 0         |
| *3860.00 +                        |  |                        |      |        |    |              |          |         | 0         |
| *3900.00 +                        |  |                        |      |        |    |              |          |         | 0         |
| *3940.00 +X                       |  |                        |      |        |    |              |          |         | 1         |
| *3980.00 +XX                      |  |                        |      |        |    |              |          |         | 3         |
| *4020.00 +XXXXXX                  |  |                        |      |        |    |              |          |         | 7         |
| *4060.00 +XXXXXXXXXX              |  |                        |      |        |    |              |          |         | 11        |
| *4100.00 +XXXXXXXXXXXX            |  |                        |      |        |    |              |          |         | 9         |
| *4140.00 +XXXXXXXXXXXXXX          |  |                        |      |        |    |              |          |         | 19        |
| *4180.00 +XXXXXXXXXXXXXXXX        |  |                        |      |        |    |              |          |         | 12        |
| *4220.00 +XXXXXXXXXXXXXXXXXX      |  |                        |      |        |    |              |          |         | 23        |
| *4260.00 +XXXXXXXXXXXXXXXXXXXX    |  |                        |      |        |    |              |          |         | 27        |
| *4300.00 +XXXXXXXXXXXXXXXXXXXXXX  |  |                        |      |        |    |              |          |         | 27        |
| *4340.00 +XXXXXXXXXXXXXXXXXXXXXXX |  |                        |      |        |    |              |          |         | 24        |
| *4380.00 +XXXXXXXXXXXXXXXXXXXXXXX |  |                        |      |        |    |              |          |         | 18        |
| *4420.00 +XXXXXXXXXXXXXXXXXXXXXX  |  |                        |      |        |    |              |          |         | 8         |
| *4460.00 +XXXXXXXXXXXXXXXXXXXX    |  |                        |      |        |    |              |          |         | 4         |
| *4500.00 +XXXX                    |  |                        |      |        |    |              |          |         | 3         |
| *4540.00 +XX                      |  |                        |      |        |    |              |          |         | 2         |
| *4580.00 +X                       |  |                        |      |        |    |              |          |         | 0         |
| *4620.00 +                        |  |                        |      |        |    |              |          |         | 0         |
| *LAST                             |  |                        |      |        |    |              |          |         | 0         |

run28



run25

| HISTOGRAM OF VARIABLE |                  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | I tsv1                 |  | SYMBOL COUNT   |          | MEAN    | ST. DEV. | FREQUENCY |
|-----------------------|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------------------------|--|----------------|----------|---------|----------|-----------|
|                       |                  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X                      |  | 238            | 3832.891 | 311.557 |          |           |
|                       |                  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | EACH SYMBOL REPRESENTS |  | 1 OBSERVATIONS |          |         |          |           |
| INTERVAL              | 5                | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | INT. CUM.              |  |                |          |         |          |           |
| NAME                  |                  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |                |          |         |          |           |
| *2100.00              | +                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8                      |  |                |          |         |          |           |
| *2200.00              | +X               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                      |  |                |          |         |          |           |
| *2300.00              | +X               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                      |  |                |          |         |          |           |
| *2400.00              | +XXXX            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5                      |  |                |          |         |          |           |
| *2500.00              | +XXXXXX          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6                      |  |                |          |         |          |           |
| *2600.00              | +XXXXXXXX        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13                     |  |                |          |         |          |           |
| *2700.00              | +XXXXXXXXXX      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21                     |  |                |          |         |          |           |
| *2800.00              | +XXXXXXXXXXXX    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 35                     |  |                |          |         |          |           |
| *2900.00              | +XXXXXXXXXXXXXX  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14                     |  |                |          |         |          |           |
| *3000.00              | +XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48                     |  |                |          |         |          |           |
| *3100.00              | +XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 74                     |  |                |          |         |          |           |
| *3200.00              | +XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32                     |  |                |          |         |          |           |
| *3300.00              | +XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 156                    |  |                |          |         |          |           |
| *3400.00              | +XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25                     |  |                |          |         |          |           |
| *3500.00              | +XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 131                    |  |                |          |         |          |           |
| *3600.00              | +XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 29                     |  |                |          |         |          |           |
| *3700.00              | +XXXXX           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 168                    |  |                |          |         |          |           |
| *3800.00              | +X               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25                     |  |                |          |         |          |           |
| *3900.00              | +                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 185                    |  |                |          |         |          |           |
| *4000.00              | +X               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25                     |  |                |          |         |          |           |
| *4100.00              | +                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18                     |  |                |          |         |          |           |
| *LAST                 | +                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 203                    |  |                |          |         |          |           |
|                       |                  | 5  | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80                     |  |                |          |         |          |           |

run29

| HISTOGRAM OF VARIABLE  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 2 tsvn                 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| SYMBOL COUNT           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| X 238                  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| EACH SYMBOL REPRESENTS |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| 1 OBSERVATIONS         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| MEAN 3278.548          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| ST.DEV. 385.638        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| FREQUENCY              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| INT. CUM.              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| INTERVAL               | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |     |
| NAME                   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| *2388.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0   |
| *2488.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *2588.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2   |
| *2688.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *2788.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7   |
| *2888.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15  |
| *2988.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5   |
| *3088.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14  |
| *3188.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 29  |
| *3288.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11  |
| *3388.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48  |
| *3488.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 25  |
| *3588.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 65  |
| *3688.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24  |
| *3788.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 89  |
| *3888.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32  |
| *3988.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 121 |
| *4088.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21  |
| *4188.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 142 |
| *4288.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 31  |
| *4388.00               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 173 |
| *LAST                  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 27  |

| HISTOGRAM OF VARIABLE | 3 tsvh | SOURCE | MEAN     | ST. DEV.  | FREQUENCY |
|-----------------------|--------|--------|----------|-----------|-----------|
| INTERVAL              | SOURCE | MEAN   | ST. DEV. | FREQUENCY | INT. CUM. |
| 1                     | 1      | 1      | 1        | 1         | 1         |
| 2                     | 2      | 2      | 2        | 2         | 2         |
| 3                     | 3      | 3      | 3        | 3         | 3         |
| 4                     | 4      | 4      | 4        | 4         | 4         |
| 5                     | 5      | 5      | 5        | 5         | 5         |
| 6                     | 6      | 6      | 6        | 6         | 6         |
| 7                     | 7      | 7      | 7        | 7         | 7         |
| 8                     | 8      | 8      | 8        | 8         | 8         |
| 9                     | 9      | 9      | 9        | 9         | 9         |
| 10                    | 10     | 10     | 10       | 10        | 10        |
| 11                    | 11     | 11     | 11       | 11        | 11        |
| 12                    | 12     | 12     | 12       | 12        | 12        |
| 13                    | 13     | 13     | 13       | 13        | 13        |
| 14                    | 14     | 14     | 14       | 14        | 14        |
| 15                    | 15     | 15     | 15       | 15        | 15        |
| 16                    | 16     | 16     | 16       | 16        | 16        |
| 17                    | 17     | 17     | 17       | 17        | 17        |
| 18                    | 18     | 18     | 18       | 18        | 18        |
| 19                    | 19     | 19     | 19       | 19        | 19        |
| 20                    | 20     | 20     | 20       | 20        | 20        |
| 21                    | 21     | 21     | 21       | 21        | 21        |
| 22                    | 22     | 22     | 22       | 22        | 22        |
| 23                    | 23     | 23     | 23       | 23        | 23        |
| 24                    | 24     | 24     | 24       | 24        | 24        |
| 25                    | 25     | 25     | 25       | 25        | 25        |
| 26                    | 26     | 26     | 26       | 26        | 26        |
| 27                    | 27     | 27     | 27       | 27        | 27        |
| 28                    | 28     | 28     | 28       | 28        | 28        |
| 29                    | 29     | 29     | 29       | 29        | 29        |
| 30                    | 30     | 30     | 30       | 30        | 30        |
| 31                    | 31     | 31     | 31       | 31        | 31        |
| 32                    | 32     | 32     | 32       | 32        | 32        |
| 33                    | 33     | 33     | 33       | 33        | 33        |
| 34                    | 34     | 34     | 34       | 34        | 34        |
| 35                    | 35     | 35     | 35       | 35        | 35        |
| 36                    | 36     | 36     | 36       | 36        | 36        |
| 37                    | 37     | 37     | 37       | 37        | 37        |
| 38                    | 38     | 38     | 38       | 38        | 38        |
| 39                    | 39     | 39     | 39       | 39        | 39        |
| 40                    | 40     | 40     | 40       | 40        | 40        |
| 41                    | 41     | 41     | 41       | 41        | 41        |
| 42                    | 42     | 42     | 42       | 42        | 42        |
| 43                    | 43     | 43     | 43       | 43        | 43        |
| 44                    | 44     | 44     | 44       | 44        | 44        |
| 45                    | 45     | 45     | 45       | 45        | 45        |
| 46                    | 46     | 46     | 46       | 46        | 46        |
| 47                    | 47     | 47     | 47       | 47        | 47        |
| 48                    | 48     | 48     | 48       | 48        | 48        |
| 49                    | 49     | 49     | 49       | 49        | 49        |
| 50                    | 50     | 50     | 50       | 50        | 50        |
| 51                    | 51     | 51     | 51       | 51        | 51        |
| 52                    | 52     | 52     | 52       | 52        | 52        |
| 53                    | 53     | 53     | 53       | 53        | 53        |
| 54                    | 54     | 54     | 54       | 54        | 54        |
| 55                    | 55     | 55     | 55       | 55        | 55        |
| 56                    | 56     | 56     | 56       | 56        | 56        |
| 57                    | 57     | 57     | 57       | 57        | 57        |
| 58                    | 58     | 58     | 58       | 58        | 58        |
| 59                    | 59     | 59     | 59       | 59        | 59        |
| 60                    | 60     | 60     | 60       | 60        | 60        |
| 61                    | 61     | 61     | 61       | 61        | 61        |
| 62                    | 62     | 62     | 62       | 62        | 62        |
| 63                    | 63     | 63     | 63       | 63        | 63        |
| 64                    | 64     | 64     | 64       | 64        | 64        |
| 65                    | 65     | 65     | 65       | 65        | 65        |
| 66                    | 66     | 66     | 66       | 66        | 66        |
| 67                    | 67     | 67     | 67       | 67        | 67        |
| 68                    | 68     | 68     | 68       | 68        | 68        |
| 69                    | 69     | 69     | 69       | 69        | 69        |
| 70                    | 70     | 70     | 70       | 70        | 70        |
| 71                    | 71     | 71     | 71       | 71        | 71        |
| 72                    | 72     | 72     | 72       | 72        | 72        |
| 73                    | 73     | 73     | 73       | 73        | 73        |
|                       |        |        |          |           |           |

run30

| HISTOGRAM OF VARIABLE 1 tsv1             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------------------------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| EACH SYMBOL REPRESENTS                   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| SYMBOL COUNT                             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| X 238                                    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| MEAN 2187.692                            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ST DEV. 372.141                          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| OBSERVATIONS                             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| INTERVAL                                 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| *688.888 +                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *758.888 +                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *988.888 +                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *1058.88 +X                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *1288.88 +XX                             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *1358.88 +XXXX                           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *1588.88 +XXXX                           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *1658.88 +XXXXXXXXXX                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *1888.88 +XXXXXXXXXXXXXXXXXX             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *1958.88 +XXXXXXXXXXXXXXXXXX             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2108.88 +XXXXXXXXXXXXXXXXXXXXXX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2258.88 +XXXXXXXXXXXXXXXXXXXXXXXXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2488.88 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2558.88 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2788.88 +XXXXXXXXXX                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *2858.88 +XXXXXXXXXXXXXXXXXX             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3088.88 +XX                             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3158.88 +X                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3388.88 +                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3458.88 +                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *3688.88 +                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| *LAST                                    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

FREQUENCY  
INT. CUM.

### HISTOGRAM OF VARIABLE 2 tsyn

| HISTOGRAM OF VARIABLE | 2 tsnr | SYMBOL COUNT           | MEAN     | ST. DEV.     |
|-----------------------|--------|------------------------|----------|--------------|
| INTERVAL              |        | X 230                  | 2341.948 | 373.811      |
|                       |        | EACH SYMBOL REPRESENTS | 1        | OBSERVATIONS |

[illegible]

[illegible]

[illegible]

run31

| HISTOGRAM OF VARIABLE |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2 tsvn                 |      | SYMBOL COUNT |  | MEAN     |  | ST. DEV.     |  |  |  |
|-----------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------------------------|------|--------------|--|----------|--|--------------|--|--|--|
|                       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X                      |      | 238          |  | 4499.586 |  | 129.867      |  |  |  |
|                       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | EACH SYMBOL REPRESENTS |      |              |  | 1        |  | OBSERVATIONS |  |  |  |
| INTERVAL              | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY              | INT. | CUM.         |  |          |  |              |  |  |  |
| NAME                  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      | 0    | 0            |  |          |  |              |  |  |  |
| *4000.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      | 0    | 0            |  |          |  |              |  |  |  |
| *4050.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      | 0    | 0            |  |          |  |              |  |  |  |
| *4100.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      | 0    | 0            |  |          |  |              |  |  |  |
| *4150.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                      | 1    | 1            |  |          |  |              |  |  |  |
| *4200.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                      | 1    | 2            |  |          |  |              |  |  |  |
| *4250.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2                      | 2    | 4            |  |          |  |              |  |  |  |
| *4300.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14                     | 14   | 18           |  |          |  |              |  |  |  |
| *4350.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 16                     | 16   | 34           |  |          |  |              |  |  |  |
| *4400.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21                     | 21   | 55           |  |          |  |              |  |  |  |
| *4450.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28                     | 28   | 83           |  |          |  |              |  |  |  |
| *4500.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 29                     | 29   | 112          |  |          |  |              |  |  |  |
| *4550.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32                     | 32   | 144          |  |          |  |              |  |  |  |
| *4600.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 35                     | 35   | 179          |  |          |  |              |  |  |  |
| *4650.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 27                     | 27   | 206          |  |          |  |              |  |  |  |
| *4700.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12                     | 12   | 218          |  |          |  |              |  |  |  |
| *4750.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5                      | 5    | 223          |  |          |  |              |  |  |  |
| *4800.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4                      | 4    | 227          |  |          |  |              |  |  |  |
| *4850.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3                      | 3    | 230          |  |          |  |              |  |  |  |
| *4900.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      | 0    | 230          |  |          |  |              |  |  |  |
| *4950.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      | 0    | 230          |  |          |  |              |  |  |  |
| *5000.00              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      | 0    | 230          |  |          |  |              |  |  |  |
| *LAST                 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      | 0    | 238          |  |          |  |              |  |  |  |

| HISTOGRAM OF VARIABLE | 3 tsyh | SYMBOL COUNT           | MEAN     | ST.DEV.      |
|-----------------------|--------|------------------------|----------|--------------|
|                       |        | X 238                  | 4687.936 | 115.468      |
|                       |        | EACH SYMBOL REPRESENTS | 1        | OBSERVATIONS |

[illegible]

run33

| HISTOGRAM OF VARIABLE |   | 1 tsv1                                         |  | SYMBOL COUNT   |  | MEAN     |  | ST. DEV. |  | FREQ      |    |
|-----------------------|---|------------------------------------------------|--|----------------|--|----------|--|----------|--|-----------|----|
| INTERVAL              |   | EACH SYMBOL REPRESENTS                         |  | X 238          |  | 2137.379 |  | 416.856  |  | INT. CUM. |    |
| NAME                  |   | 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 |  | 1 OBSERVATIONS |  |          |  |          |  |           |    |
| *600.000              | + |                                                |  |                |  |          |  |          |  |           | 0  |
| *750.000              | + |                                                |  |                |  |          |  |          |  |           | 0  |
| *900.000              | + |                                                |  |                |  |          |  |          |  |           | 1  |
| *1050.000             | + |                                                |  |                |  |          |  |          |  |           | 1  |
| *1200.000             | + |                                                |  |                |  |          |  |          |  |           | 2  |
| *1350.000             | + |                                                |  |                |  |          |  |          |  |           | 2  |
| *1500.000             | + |                                                |  |                |  |          |  |          |  |           | 3  |
| *1650.000             | + |                                                |  |                |  |          |  |          |  |           | 3  |
| *1800.000             | + |                                                |  |                |  |          |  |          |  |           | 9  |
| *1950.000             | + |                                                |  |                |  |          |  |          |  |           | 11 |
| *2100.000             | + |                                                |  |                |  |          |  |          |  |           | 23 |
| *2250.000             | + |                                                |  |                |  |          |  |          |  |           | 18 |
| *2400.000             | + |                                                |  |                |  |          |  |          |  |           | 35 |
| *2550.000             | + |                                                |  |                |  |          |  |          |  |           | 41 |
| *2700.000             | + |                                                |  |                |  |          |  |          |  |           | 38 |
| *2850.000             | + |                                                |  |                |  |          |  |          |  |           | 19 |
| *3000.000             | + |                                                |  |                |  |          |  |          |  |           | 11 |
| *3150.000             | + |                                                |  |                |  |          |  |          |  |           | 6  |
| *3300.000             | + |                                                |  |                |  |          |  |          |  |           | 1  |
| *3450.000             | + |                                                |  |                |  |          |  |          |  |           | 1  |
| *3600.000             | + |                                                |  |                |  |          |  |          |  |           | 1  |
| *LAST                 | + |                                                |  |                |  |          |  |          |  |           | 0  |

run32

| HISTOGRAM OF VARIABLE 2 tsvn          |               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
|---------------------------------------|---------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| SYMBOL COUNT MEAN ST.DEV.             |               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| X 238 3488.666 341.889                |               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| EACH SYMBOL REPRESENTS 1 OBSERVATIONS |               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |           |
| INTERVAL                              | 5             | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
| NAME                                  | +             | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | INT. CUM. |
| *2400.00                              | +X            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *2500.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *2600.00                              | +X            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *2700.00                              | +XXXX         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *2800.00                              | +XXXXXX       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12        |
| *2900.00                              | +XXX          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *3000.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *3100.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15        |
| *3200.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 38        |
| *3300.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12        |
| *3400.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 42        |
| *3500.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 63        |
| *3600.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28        |
| *3700.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 83        |
| *3800.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32        |
| *3900.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 115       |
| *4000.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28        |
| *4100.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 135       |
| *4200.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 26        |
| *4300.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 161       |
| *4400.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28        |
| *4500.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 181       |
| *4600.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24        |
| *4700.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 285       |
| *4800.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18        |
| *4900.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 215       |
| *5000.00                              | +XXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *5100.00                              | +XXXX         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 223       |
| *5200.00                              | +XX           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *5300.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 227       |
| *5400.00                              | +X            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *5500.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
| *5600.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *5700.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
| *5800.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *5900.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6000.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *6100.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6200.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6300.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6400.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6500.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6600.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6700.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6800.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *6900.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7000.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7100.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7200.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7300.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7400.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7500.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7600.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7700.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7800.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *7900.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8000.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8100.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8200.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8300.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8400.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8500.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8600.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8700.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8800.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *8900.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9000.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9100.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9200.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9300.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9400.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9500.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9600.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9700.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9800.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *9900.00                              | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *10000.00                             | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *LAST                                 | +             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |

run32

HISTOGRAM OF VARIABLE 3 tswh

MEAN 3584.652  
ST. DEV. 336.385  
OBSERVATIONS 1

SYMBOL COUNT  
X 238  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *2600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *2700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *2800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *2900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *3000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *3100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
| *3200.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *3300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17        |
| *3400.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
| *3500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13        |
| *3600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 38        |
| *3700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *3800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 41        |
| *3900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19        |
| *4000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 68        |
| *4100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24        |
| *4200.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 84        |
| *4300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 34        |
| *4400.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 118       |
| *4500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15        |
| *4600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 133       |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 26        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 159       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 26        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 185       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 284       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13        |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 217       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 223       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 228       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
|          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |

run32

# HISTOGRAM OF VARIABLE. I tsv1

MEAN 3195.598  
ST.DEV. 346.868  
OBSERVATIONS 1

SOURCE REPRESENTS  
X 238

FREQUENCY  
INT. CUM.

| INTERVAL | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80  |
|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| NAME     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
| *2300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *2350.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *2400.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2   |
| *2450.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *2500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6   |
| *2550.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5   |
| *2600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13  |
| *2650.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4   |
| *2700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17  |
| *2750.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 13  |
| *2800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 38  |
| *2850.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 44  |
| *2900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22  |
| *2950.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 66  |
| *3000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14  |
| *3050.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 44  |
| *3100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 23  |
| *3150.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 89  |
| *3200.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28  |
| *3250.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 117 |
| *3300.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 137 |
| *3350.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 26  |
| *3400.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 163 |
| *3450.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 23  |
| *3500.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 186 |
| *3550.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18  |
| *3600.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 284 |
| *3650.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18  |
| *3700.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 214 |
| *3750.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18  |
| *3800.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 9   |
| *3850.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 223 |
| *3900.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *3950.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 226 |
| *4000.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *4050.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229 |
| *4100.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *4150.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229 |
| *4200.00 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *LAST    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238 |

run33

| HISTOGRAM OF VARIABLE |    |                 |    |    |    |    |    |    |    |    |    |    |    |    |    | 2 tsvn                 |  | SYMBOL COUNT |  | MEAN         |  | ST.DEV. |  | FREQUENCY<br>INT. CUM. |
|-----------------------|----|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|------------------------|--|--------------|--|--------------|--|---------|--|------------------------|
| INTERVAL              |    |                 |    |    |    |    |    |    |    |    |    |    |    |    |    | X                      |  | 2341.388     |  | 417.882      |  |         |  |                        |
| NAME                  |    |                 |    |    |    |    |    |    |    |    |    |    |    |    |    | EACH SYMBOL REPRESENTS |  | 1            |  | OBSERVATIONS |  |         |  |                        |
| 5                     | 10 | 15              | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |                        |  |              |  |              |  |         |  |                        |
| *750.000              | +  |                 |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      |  |              |  |              |  |         |  |                        |
| *900.000              | +  |                 |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      |  |              |  |              |  |         |  |                        |
| *1050.000             | +  |                 |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      |  |              |  |              |  |         |  |                        |
| *1200.000             | +  | X               |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                      |  |              |  |              |  |         |  |                        |
| *1350.000             | +  | XXX             |    |    |    |    |    |    |    |    |    |    |    |    |    | 3                      |  |              |  |              |  |         |  |                        |
| *1500.000             | +  | XX              |    |    |    |    |    |    |    |    |    |    |    |    |    | 2                      |  |              |  |              |  |         |  |                        |
| *1650.000             | +  | XXXX            |    |    |    |    |    |    |    |    |    |    |    |    |    | 4                      |  |              |  |              |  |         |  |                        |
| *1800.000             | +  | XXXXXXXXXX      |    |    |    |    |    |    |    |    |    |    |    |    |    | 10                     |  |              |  |              |  |         |  |                        |
| *1950.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 11                     |  |              |  |              |  |         |  |                        |
| *2100.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 21                     |  |              |  |              |  |         |  |                        |
| *2250.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 21                     |  |              |  |              |  |         |  |                        |
| *2400.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 15                     |  |              |  |              |  |         |  |                        |
| *2550.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 32                     |  |              |  |              |  |         |  |                        |
| *2700.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 41                     |  |              |  |              |  |         |  |                        |
| *2850.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 35                     |  |              |  |              |  |         |  |                        |
| *3000.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 19                     |  |              |  |              |  |         |  |                        |
| *3150.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 23                     |  |              |  |              |  |         |  |                        |
| *3300.000             | +  | XXXXXXXXXXXXXXX |    |    |    |    |    |    |    |    |    |    |    |    |    | 6                      |  |              |  |              |  |         |  |                        |
| *3450.000             | +  | XXX             |    |    |    |    |    |    |    |    |    |    |    |    |    | 12                     |  |              |  |              |  |         |  |                        |
| *3600.000             | +  | X               |    |    |    |    |    |    |    |    |    |    |    |    |    | 3                      |  |              |  |              |  |         |  |                        |
| *3750.000             | +  | X               |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                      |  |              |  |              |  |         |  |                        |
| *LAST                 | +  |                 |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                      |  |              |  |              |  |         |  |                        |
|                       |    |                 |    |    |    |    |    |    |    |    |    |    |    |    |    | 0                      |  |              |  |              |  |         |  |                        |

run33

# HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST.DEV.  
X 238 2546.448 415.853  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL              | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|-----------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME                  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *900.000 +            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *1050.000 +           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *1200.000 +           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *1350.000 +X          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *1500.000 +X          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *1650.000 +XX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *1800.000 +XXX        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8         |
| *1950.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17        |
| *2100.000 +XXXXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 34        |
| *2250.000 +XXXXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 52        |
| *2400.000 +XXXXXXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 77        |
| *2550.000 +XXXXXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 115       |
| *2700.000 +XXXXXXXXX  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 149       |
| *2850.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 177       |
| *3000.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 201       |
| *3150.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 212       |
| *3300.000 +XXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 223       |
| *3450.000 +XXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *3600.000 +XX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *3750.000 +X          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *3900.000 +           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *LAST                 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |

run34

| HISTOGRAM OF VARIABLE  |    |                        |    |    |    |    |    |    |  | I tsv1         |  | SYMBOL |  | COUNT |  | MEAN     |  | ST. DEV. |    | FREQUENCY |  |
|------------------------|----|------------------------|----|----|----|----|----|----|--|----------------|--|--------|--|-------|--|----------|--|----------|----|-----------|--|
| INTERVAL               |    |                        |    |    |    |    |    |    |  | NAME           |  | X      |  | 238   |  | 4499.528 |  | 154.859  |    | INT. CUM. |  |
| EACH SYMBOL REPRESENTS |    |                        |    |    |    |    |    |    |  | 1 OBSERVATIONS |  |        |  |       |  |          |  |          |    |           |  |
| 5                      | 15 | 25                     | 35 | 45 | 55 | 65 | 75 | 85 |  |                |  |        |  |       |  |          |  |          |    |           |  |
| *3958.88               | +  |                        |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 8  | 8         |  |
| *4088.88               | +  | X                      |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 1  | 1         |  |
| *4858.88               | +  |                        |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 8  | 8         |  |
| *4188.88               | +  |                        |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 8  | 8         |  |
| *4158.88               | +  | X                      |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 1  | 1         |  |
| *4288.88               | +  | XX                     |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 2  | 2         |  |
| *4258.88               | +  | XXXXXXXX               |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 8  | 12        |  |
| *4388.88               | +  | XXXXXXXXXXXX           |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 14 | 26        |  |
| *4358.88               | +  | XXXXXXXXXXXX           |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 14 | 40        |  |
| *4488.88               | +  | XXXXXXXXXXXXXXXXXX     |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 24 | 64        |  |
| *4458.88               | +  | XXXXXXXXXXXXXXXXXX     |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 24 | 88        |  |
| *4588.88               | +  | XXXXXXXXXXXXXXXXXX     |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 23 | 111       |  |
| *4558.88               | +  | XXXXXXXXXXXXXXXXXX     |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 21 | 134       |  |
| *4688.88               | +  | XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 26 | 160       |  |
| *4658.88               | +  | XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 33 | 193       |  |
| *4788.88               | +  | XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 38 | 231       |  |
| *4758.88               | +  | XXXXXXXXXXXX           |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 14 | 245       |  |
| *4888.88               | +  | XXXX                   |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 4  | 249       |  |
| *4858.88               | +  | XXXX                   |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 4  | 253       |  |
| *4988.88               | +  | X                      |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 1  | 254       |  |
| *4958.88               | +  |                        |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 8  | 262       |  |
| *LAST                  | +  |                        |    |    |    |    |    |    |  |                |  |        |  |       |  |          |  |          | 8  | 270       |  |

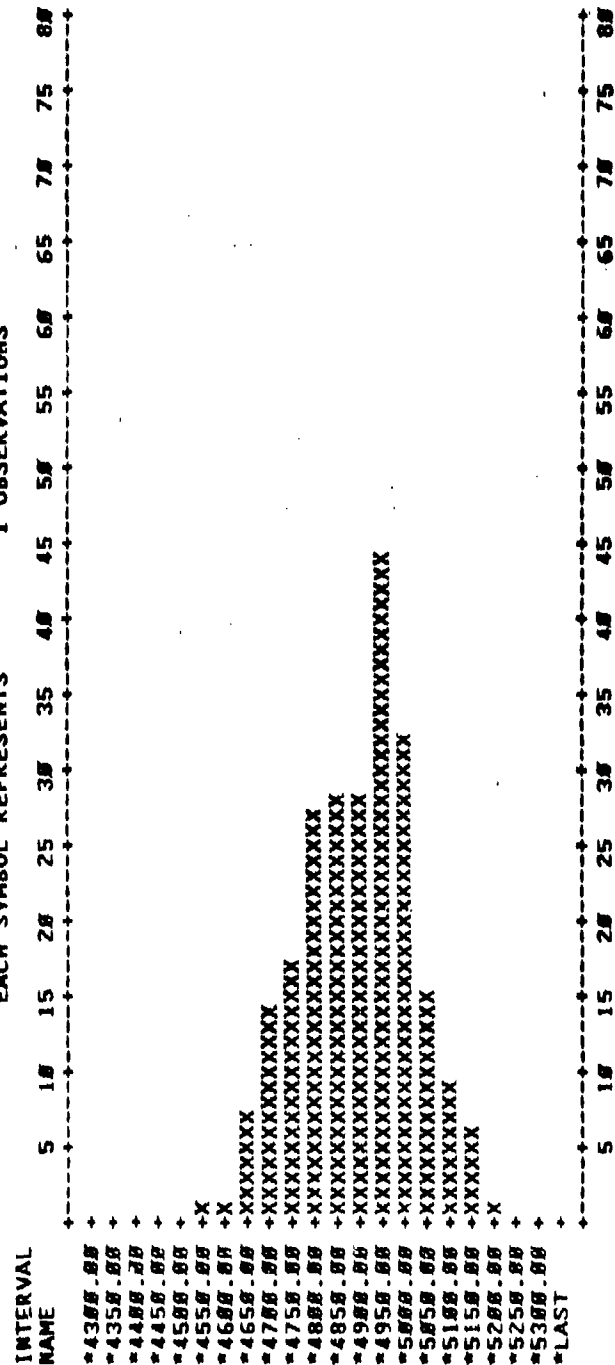
[illegible]

run34

HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST.DEV.  
X 238 4874.298 122.178  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

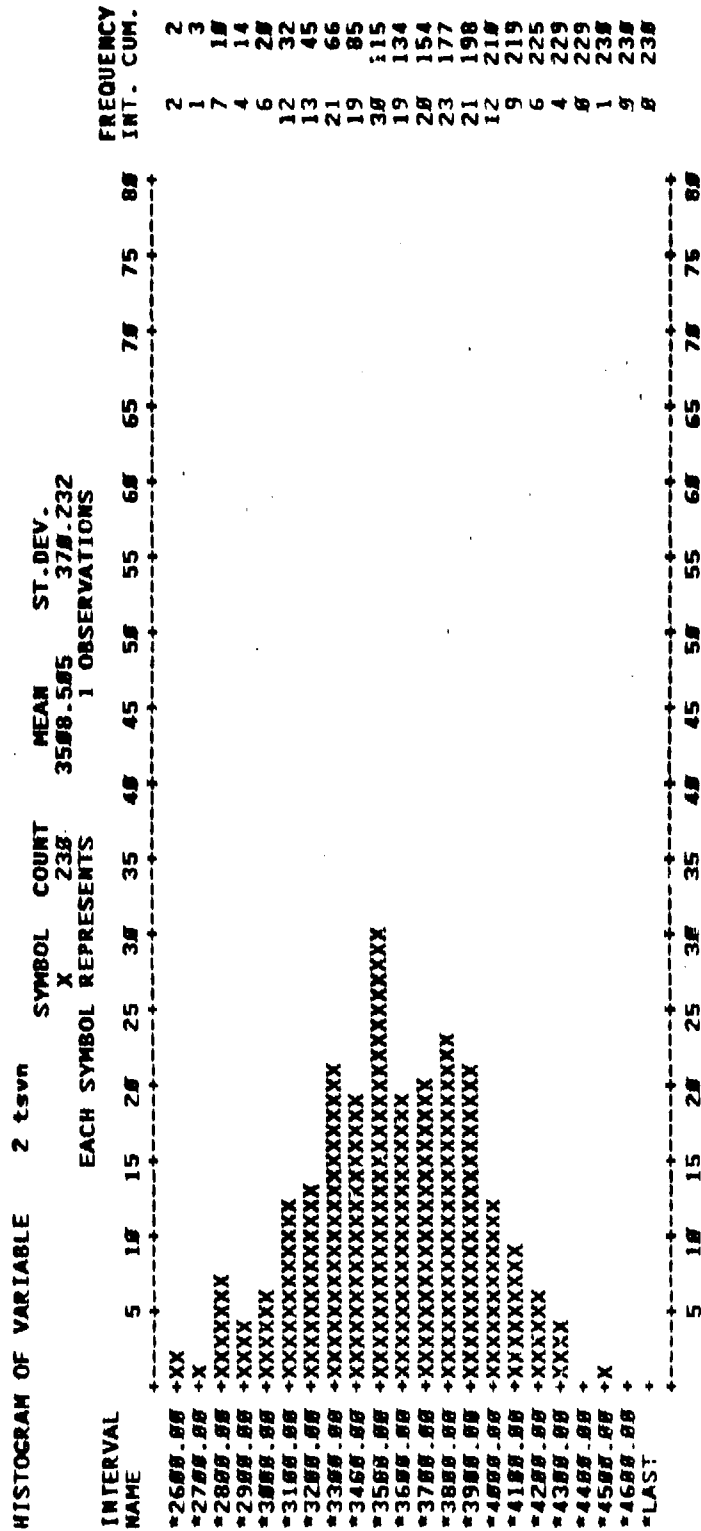
FREQUENCY  
INT. CUM.



run35

| HISTOGRAM OF VARIABLE |                          | 1                      | tsv1 | SYMBOL |    | COUNT | MEAN | ST.DEV. | FREQUENCY |
|-----------------------|--------------------------|------------------------|------|--------|----|-------|------|---------|-----------|
| NAME                  |                          | 5                      | 10   | 15     | 20 | 25    | 30   | 35      |           |
|                       |                          | EACH SYMBOL REPRESENTS |      |        |    |       |      |         | INT. CUM. |
|                       |                          | X                      |      |        |    |       |      |         |           |
|                       |                          | 3314.858               |      |        |    |       |      |         |           |
|                       |                          | 374.746                |      |        |    |       |      |         |           |
|                       |                          | 1 OBSERVATIONS         |      |        |    |       |      |         |           |
| INTERVAL              |                          | 5                      | 10   | 15     | 20 | 25    | 30   | 35      |           |
| *2400.00              | +XX                      |                        |      |        |    |       |      |         | 2         |
| *2500.00              | +X                       |                        |      |        |    |       |      |         | 1         |
| *2600.00              | +XXXXXXXX                |                        |      |        |    |       |      |         | 8         |
| *2700.00              | +XX                      |                        |      |        |    |       |      |         | 2         |
| *2800.00              | +XXXXXXXX                |                        |      |        |    |       |      |         | 7         |
| *2900.00              | +XXXXXXXXXX              |                        |      |        |    |       |      |         | 11        |
| *3000.00              | +XXXXXXXXXXXX            |                        |      |        |    |       |      |         | 31        |
| *3100.00              | +XXXXXXXXXXXXXX          |                        |      |        |    |       |      |         | 15        |
| *3200.00              | +XXXXXXXXXXXXXXXX        |                        |      |        |    |       |      |         | 46        |
| *3300.00              | +XXXXXXXXXXXXXXXXXX      |                        |      |        |    |       |      |         | 19        |
| *3400.00              | +XXXXXXXXXXXXXXXXXXXX    |                        |      |        |    |       |      |         | 65        |
| *3500.00              | +XXXXXXXXXXXXXXXXXXXXX   |                        |      |        |    |       |      |         | 20        |
| *3600.00              | +XXXXXXXXXXXXXXXXXXXXXX  |                        |      |        |    |       |      |         | 29        |
| *3700.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 114       |
| *3800.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 15        |
| *3900.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 129       |
| *4000.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 24        |
| *4100.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 153       |
| *4200.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 22        |
| *4300.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 175       |
| *4400.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 21        |
| *4500.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 196       |
| *4600.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 14        |
| *4700.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 210       |
| *4800.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 8         |
| *4900.00              | +XXXXXXXXXXXXXXXXXXXXXXX |                        |      |        |    |       |      |         | 224       |
| *5000.00              | +XXXX                    |                        |      |        |    |       |      |         | 4         |
| *5100.00              | +X                       |                        |      |        |    |       |      |         | 228       |
| *5200.00              | +X                       |                        |      |        |    |       |      |         | 1         |
| *5300.00              | +X                       |                        |      |        |    |       |      |         | 229       |
| *5400.00              | +X                       |                        |      |        |    |       |      |         | 1         |
| *5500.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *5600.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *5700.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *5800.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *5900.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6000.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6100.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6200.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6300.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6400.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6500.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6600.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6700.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6800.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *6900.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7000.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7100.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7200.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7300.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7400.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7500.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7600.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7700.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7800.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *7900.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8000.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8100.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8200.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8300.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8400.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8500.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8600.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8700.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8800.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *8900.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9000.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9100.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9200.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9300.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9400.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9500.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9600.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9700.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9800.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *9900.00              | +X                       |                        |      |        |    |       |      |         | 230       |
| *10000.00             | +X                       |                        |      |        |    |       |      |         | 230       |
| *LAST                 |                          |                        |      |        |    |       |      |         |           |

run35



run35

HISTOGRAM OF VARIABLE 3 tswh

MEAN 3688.938 ST. DEV. 366.385  
 SYMBOL COUNT 238  
 X  
 EACH SYMBOL REPRESENTS 1 OBSERVATIONS

FREQUENCY  
 INT. CUM.

| INTERVAL NAME | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |     |
|---------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| *2800.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2   |
| *2900.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *3000.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *3100.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *3200.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11  |
| *3300.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14  |
| *3400.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *3500.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22  |
| *3600.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *3700.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18  |
| *3800.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32  |
| *3900.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 14  |
| *4000.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 46  |
| *4100.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24  |
| *4200.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 78  |
| *4300.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22  |
| *4400.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 92  |
| *4500.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 27  |
| *4600.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 119 |
| *4700.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 15  |
| *4800.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 134 |
| *4900.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 24  |
| *5000.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 158 |
| *5100.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 29  |
| *5200.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 187 |
| *5300.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17  |
| *5400.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 284 |
| *5500.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *5600.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 212 |
| *5700.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18  |
| *5800.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 222 |
| *5900.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3   |
| *6000.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 225 |
| *6100.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4   |
| *6200.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229 |
| *6300.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *6400.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1   |
| *6500.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238 |
| *6600.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 8   |
| *6700.00      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238 |
| *LAST         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |

run36

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST.DEV.  
X 238 2154.222 453.632  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL                          | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|-----------------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME                              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *600.000 +                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *750.000 +                        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *900.000 +X                       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *1050.000 +XXX                    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *1200.000 +X                      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *1350.000 +XXX                    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3         |
| *1500.000 +XXXXXXXX               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 10        |
| *1650.000 +XXXXXXXXXX             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *1800.000 +XXXXXXXXXXXX           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 21        |
| *1950.000 +XXXXXXXXXXXXXX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 17        |
| *2100.000 +XXXXXXXXXXXXXXXX       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 32        |
| *2250.000 +XXXXXXXXXXXXXXXXXX     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 42        |
| *2400.000 +XXXXXXXXXXXXXXXXXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 28        |
| *2550.000 +XXXXXXXXXXXXXXXXXXXXX  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18        |
| *2700.000 +XXXXXXXXXXXXXXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 19        |
| *2850.000 +XXXXXXXXXXXX           |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7         |
| *3000.000 +XXXXXXXXXXXXXX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 11        |
| *3150.000 +XXXX                   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *3300.000 +X                      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *3450.000 +                       |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *3600.000 +X                      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *LAST                             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |

run36

| HISTOGRAM OF VARIABLE  |                  | 2 tsyn |    | SYMBOL COUNT |    | MEAN           |    | ST. DEV. |    |    |    |    |    |    |    |    |    |           |  |  |  |  |  |  |  |  |
|------------------------|------------------|--------|----|--------------|----|----------------|----|----------|----|----|----|----|----|----|----|----|----|-----------|--|--|--|--|--|--|--|--|
|                        |                  |        |    | X            |    | 2341.339       |    | 454.796  |    |    |    |    |    |    |    |    |    |           |  |  |  |  |  |  |  |  |
| EACH SYMBOL REPRESENTS |                  |        |    | 238          |    | 1 OBSERVATIONS |    |          |    |    |    |    |    |    |    |    |    |           |  |  |  |  |  |  |  |  |
| INTERVAL               | NAME             | 5      | 10 | 15           | 20 | 25             | 30 | 35       | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |  |  |  |  |  |  |  |  |
| *750.000               | +                |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 0         |  |  |  |  |  |  |  |  |
| *900.000               | +                |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 0         |  |  |  |  |  |  |  |  |
| *1050.00               | +X               |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 1         |  |  |  |  |  |  |  |  |
| *1200.00               | +X               |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 1         |  |  |  |  |  |  |  |  |
| *1350.00               | +XX              |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 2         |  |  |  |  |  |  |  |  |
| *1500.00               | +XXX             |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 4         |  |  |  |  |  |  |  |  |
| *1650.00               | +XXXX            |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 7         |  |  |  |  |  |  |  |  |
| *1800.00               | +XXXXXX          |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 10        |  |  |  |  |  |  |  |  |
| *1950.00               | +XXXXXXXX        |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 17        |  |  |  |  |  |  |  |  |
| *2100.00               | +XXXXXXXXXX      |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 27        |  |  |  |  |  |  |  |  |
| *2250.00               | +XXXXXXXXXXXX    |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 48        |  |  |  |  |  |  |  |  |
| *2400.00               | +XXXXXXXXXXXXXXX |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 61        |  |  |  |  |  |  |  |  |
| *2550.00               | +XXXXXXXXXXXXXXX |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 90        |  |  |  |  |  |  |  |  |
| *2700.00               | +XXXXXXXXXXXXXXX |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 129       |  |  |  |  |  |  |  |  |
| *2850.00               | +XXXXXXXXXXXXXXX |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 159       |  |  |  |  |  |  |  |  |
| *3000.00               | +XXXXXXXXXXXXXXX |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 179       |  |  |  |  |  |  |  |  |
| *3150.00               | +XXXXXXXXXXXXXXX |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 203       |  |  |  |  |  |  |  |  |
| *3300.00               | +XXXXXXXXXXXXXXX |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 211       |  |  |  |  |  |  |  |  |
| *3450.00               | +XX              |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 227       |  |  |  |  |  |  |  |  |
| *3600.00               | +                |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 229       |  |  |  |  |  |  |  |  |
| *3750.00               | +X               |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 0         |  |  |  |  |  |  |  |  |
| *LAST                  | +                |        |    |              |    |                |    |          |    |    |    |    |    |    |    |    |    | 1         |  |  |  |  |  |  |  |  |
|                        |                  | 5      | 10 | 15           | 20 | 25             | 30 | 35       | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 0         |  |  |  |  |  |  |  |  |

run36

# HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST.DEV.  
X 238 2528.987 452.489  
EACH SYMBOL REPRESENTS 1 OBSERVATIONS

| INTERVAL                  | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | FREQUENCY |
|---------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| NAME                      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | INT. CUM. |
| *900.000 +                |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *1050.00 +                |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0         |
| *1200.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1         |
| *1350.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2         |
| *1500.00 +XX              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4         |
| *1650.00 +XXX             |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 7         |
| *1800.00 +XXXX            |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12        |
| *1950.00 +XXXXXXX         |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 22        |
| *2100.00 +XXXXXXXX        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 48        |
| *2250.00 +XXXXXXXXXX      |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 57        |
| *2400.00 +XXXXXXXXXXXX    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 82        |
| *2550.00 +XXXXXXXXXXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 118       |
| *2700.00 +XXXXXXXXXXXXXX  |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 151       |
| *2850.00 +XXXXXXXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 177       |
| *3000.00 +XXXXXXXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 195       |
| *3150.00 +XXXXXXXXXXXXXXX |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 211       |
| *3300.00 +XXXXXXXXXXXXX   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 228       |
| *3450.00 +XXXXXX          |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 226       |
| *3600.00 +XX              |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 229       |
| *3750.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *3900.00 +X               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |
| *LAST                     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 238       |

run37

| HISTOGRAM OF VARIABLE |             | 1 tsv1 |    | SYMBOL COUNT           |    | MEAN           |    | ST.DEV. |     | FREQUENCY |     |     |     |     |     |     |     |     |
|-----------------------|-------------|--------|----|------------------------|----|----------------|----|---------|-----|-----------|-----|-----|-----|-----|-----|-----|-----|-----|
|                       |             |        |    | X                      |    | 7513.865       |    | 228.216 |     | INT. CUM. |     |     |     |     |     |     |     |     |
|                       |             |        |    | EACH SYMBOL REPRESENTS |    | 3 OBSERVATIONS |    |         |     |           |     |     |     |     |     |     |     |     |
| INTERVAL              | NAME        | 15     | 38 | 45                     | 68 | 75             | 98 | 105     | 128 | 135       | 158 | 165 | 188 | 195 | 218 | 225 | 248 |     |
| *6858.88              | +           |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 8   |
| *6988.88              | +           |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 1   |
| *6958.88              | +           |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 8   |
| *7888.88              | +           |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 1   |
| *7858.88              | +X          |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 4   |
| *7188.88              | +KXX        |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 5   |
| *7158.88              | +XXX        |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 14  |
| *7288.88              | +XXX        |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 9   |
| *7258.88              | +XXXX       |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 23  |
| *7388.88              | +XXXXXXX    |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 33  |
| *7358.88              | +XXXXXXXX   |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 18  |
| *7488.88              | +XXXXXXXXXX |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 11  |
| *7458.88              | +XXXXXXXXXX |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 44  |
| *7588.88              | +XXXXXXXXXX |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 22  |
| *7558.88              | +XXXXXXXXXX |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 66  |
| *7688.88              | +XXXXXXXXXX |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 37  |
| *7658.88              | +XXXXXXXXXX |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 138 |
| *7788.88              | +XXXXXXXXXX |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 25  |
| *7758.88              | +XXXXXXXXXX |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 155 |
| *7888.88              | +XXXXX      |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 36  |
| *7858.88              | +XXXXX      |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 191 |
| *7988.88              | +XXXXX      |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 33  |
| *7958.88              | +X          |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 224 |
| *8088.88              | +X          |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 35  |
| *8058.88              | +           |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 259 |
| *8188.88              | +X          |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 33  |
| *8158.88              | +           |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 292 |
| *8288.88              | +           |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 28  |
| *LAST                 | +           |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 328 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 24  |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 344 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 14  |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 358 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 14  |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 372 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 16  |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 388 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 4   |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 392 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 2   |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 394 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 1   |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 395 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 4   |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 399 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 8   |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 1   |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 488 |
|                       |             |        |    |                        |    |                |    |         |     |           |     |     |     |     |     |     |     | 8   |

run37

# HISTOGRAM OF VARIABLE 2 tsun

MEAN 8552.846  
ST.DEV. 175.749  
3 OBSERVATIONS

SYMBOL COUNT  
X 488  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.

| INTERVAL NAME           | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
|-------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| *7950.00 +              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8000.00 +              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8050.00 +              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8100.00 +              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8150.00 +X             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8200.00 +XXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8250.00 +XXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8300.30 +XXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8350.00 +XXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8400.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8450.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8500.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8550.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8600.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8650.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8700.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8750.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8800.00 +XXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8850.00 +XXXXXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8900.00 +XXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8950.00 +X             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9000.00 +X             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9050.00 +X             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9100.00 +              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *LAST                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |

1 1  
1 1  
1 1  
2 3  
8 11  
9 28  
9 29  
14 43  
37 88  
35 115  
39 154  
40 194  
50 244  
42 286  
32 318  
30 348  
19 367  
17 384  
9 393  
2 395  
2 397  
2 399  
1 400  
1 400

run37

HISTOGRAM OF VARIABLE 3 tsvh

MEAN 9376.144  
ST.DEV. 139.917  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
|----------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NAME     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8900.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8950.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9000.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9050.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9100.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9150.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9200.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9250.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9300.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9350.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9400.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9450.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9500.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9550.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9600.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9650.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9700.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9750.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9800.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *LAST    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |

|   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |   |   |   |   |
|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|---|---|---|---|
| 8 | 1 | 1 | 1 | 1 | 2 | 6 | 13 | 19 | 38 | 48 | 51 | 61 | 38 | 33 | 28 | 16 | 2 | 2 | 3 | 8 |
| 8 | 1 | 1 | 1 | 1 | 2 | 6 | 13 | 19 | 38 | 48 | 51 | 61 | 38 | 33 | 28 | 16 | 2 | 2 | 3 | 8 |

run38

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST. DEV.  
X 488 5698.823 426.723  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
|----------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NAME     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4388.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *4488.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *4588.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *4688.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 3   |
| *4788.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *4888.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 9   |
| *4988.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 15  |
| *5088.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *5188.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 14  |
| *5288.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 9   |
| *5388.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 46  |
| *5488.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 22  |
| *5588.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 68  |
| *5688.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 37  |
| *5788.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 185 |
| *5888.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 22  |
| *5988.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 127 |
| *6088.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 38  |
| *6188.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 165 |
| *6288.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 31  |
| *6388.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 196 |
| *6488.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 32  |
| *6588.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 228 |
| *6688.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 29  |
| *6788.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 257 |
| *6888.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 39  |
| *6988.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 296 |
| *7088.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 28  |
| *7188.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 324 |
| *7288.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 31  |
| *7388.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 355 |
| *7488.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 19  |
| *7588.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 374 |
| *7688.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 11  |
| *7788.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 395 |
| *7888.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 4   |
| *7988.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 389 |
| *8088.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 7   |
| *8188.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 396 |
| *8288.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *8388.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 393 |
| *8488.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *8588.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399 |
| *8688.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *8788.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399 |
| *8888.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *8988.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *9088.88 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 488 |
| *LAST    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |

run38

HISTOGRAM OF VARIABLE 2 tsyn

SYMBOL COUNT MEAN ST. DEV.  
X 488 6594.195 419.579  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL NAME          | 15 | 38 | 45 | 68 | 75 | 98 | 105 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | FREQUENCY | INT. CUM. |
|------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|-----------|
| *5388.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 1         |
| *5488.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 2         |
| *5588.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 3         |
| *5688.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5         | 8         |
| *5788.88 +XX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 16        |
| *5888.88 +XXX          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         | 25        |
| *5988.88 +XXX          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 14        | 39        |
| *6088.88 +XXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 47        |
| *6188.88 +XXX          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 22        | 69        |
| *6288.88 +XXXXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        | 99        |
| *6388.88 +XXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 28        | 127       |
| *6488.88 +XXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 34        | 161       |
| *6588.88 +XXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        | 202       |
| *6688.88 +XXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 32        | 234       |
| *6788.88 +XXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        | 264       |
| *6888.88 +XXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 36        | 300       |
| *6988.88 +XXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29        | 329       |
| *7088.88 +XXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 25        | 354       |
| *7188.88 +XXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 26        | 380       |
| *7288.88 +XXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 388       |
| *7388.88 +XXX          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5         | 393       |
| *7488.88 +XX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         | 397       |
| *7588.88 +X            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 398       |
| *7688.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 399       |
| *7788.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 399       |
| *7888.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 400       |
| *7988.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 408       |
| *8088.88 +             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 416       |
| *LAST                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 424       |

Run38

HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST.DEV.  
X 498 7471.838 498.682  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL        | 15 | 38 | 45 | 68 | 75 | 98 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | FREQUENCY |
|-----------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *6200.00 +      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8         |
| *6300.00 +      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1         |
| *6400.00 +      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1         |
| *6500.00 +X     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2         |
| *6600.00 +X     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 3         |
| *6700.00 +XXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 7         |
| *6800.00 +XXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 9         |
| *6900.00 +XXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 16        |
| *7000.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8         |
| *7100.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 24        |
| *7200.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 37        |
| *7300.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 15        |
| *7400.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 52        |
| *7500.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 19        |
| *7600.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 71        |
| *7700.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 38        |
| *7800.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 189       |
| *7900.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 21        |
| *8000.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 138       |
| *8100.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 35        |
| *8200.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 165       |
| *8300.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 45        |
| *8400.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 218       |
| *8500.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 38        |
| *8600.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 278       |
| *8700.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 38        |
| *8800.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 388       |
| *8900.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 34        |
| *9000.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 342       |
| *9100.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 24        |
| *9200.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 366       |
| *9300.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 16        |
| *9400.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8         |
| *9500.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 398       |
| *9600.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 7         |
| *9700.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 397       |
| *9800.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8         |
| *9900.00 +XXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399       |
| *10000.00 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2         |
| *10100.00 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399       |
| *10200.00 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8         |
| *10300.00 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399       |
| *10400.00 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1         |
| *10500.00 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 488       |
| *LAST           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8         |

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| HISTOGRAM OF VARIABLE  |  |          |    |                      |    |    |    |     |     |     |     |     |     |     |     |     | 1 tsv1         |     |          |  |
|------------------------|--|----------|----|----------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|-----|----------|--|
| SYMBOL COUNT           |  |          |    |                      |    |    |    |     |     |     |     |     |     |     |     |     | MEAN           |     | ST. DEV. |  |
| X                      |  |          |    |                      |    |    |    |     |     |     |     |     |     |     |     |     | 3695.127       |     | 472.166  |  |
| EACH SYMBOL REPRESENTS |  |          |    |                      |    |    |    |     |     |     |     |     |     |     |     |     | 3 OBSERVATIONS |     |          |  |
| INTERVAL               |  | 15       | 30 | 45                   | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240            |     |          |  |
| NAME                   |  | *2250.00 | +  |                      |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *2400.00 | +  |                      |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *2550.00 | +  |                      |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *2700.00 | +  | X                    |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *2850.00 | +  | XXXX                 |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *3000.00 | +  | XX                   |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *3150.00 | +  | XXXXXXXXXX           |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *3300.00 | +  | XXXXXXXXXX           |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *3450.00 | +  | XXXXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *3600.00 | +  | XXXXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *3750.00 | +  | XXXXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *3900.00 | +  | XXXXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *4050.00 | +  | XXXXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *4200.00 | +  | XXXXXXXXXX           |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *4350.00 | +  | XXXXXXXXXX           |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *4500.00 | +  | XXXXXX               |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *4650.00 | +  | XXXX                 |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *4800.00 | +  | XX                   |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *4950.00 | +  | X                    |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *5100.00 | +  |                      |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  | *LAST    | +  |                      |    |    |    |     |     |     |     |     |     |     |     |     |                |     |          |  |
|                        |  |          |    | 15                   | 30 | 45 | 60 | 75  | 90  | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210            | 225 | 240      |  |

| FREQUENCY |      |
|-----------|------|
| INT.      | CUM. |
| 0         | 0    |
| 1         | 1    |
| 1         | 2    |
| 1         | 3    |
| 3         | 5    |
| 12        | 17   |
| 7         | 24   |
| 27        | 51   |
| 24        | 75   |
| 47        | 122  |
| 50        | 172  |
| 52        | 224  |
| 49        | 273  |
| 36        | 309  |
| 26        | 335  |
| 27        | 362  |
| 17        | 379  |
| 11        | 390  |
| 6         | 396  |
| 3         | 399  |
| 1         | 400  |
| 0         | 400  |

FREQUENCY  
INT. CUM.

|    |     |
|----|-----|
| 0  | 0   |
| 1  | 1   |
| 1  | 2   |
| 3  | 5   |
| 12 | 17  |
| 7  | 24  |
| 27 | 51  |
| 24 | 75  |
| 47 | 122 |
| 50 | 172 |
| 52 | 224 |
| 49 | 273 |
| 36 | 309 |
| 26 | 335 |
| 27 | 362 |
| 17 | 379 |
| 11 | 390 |
| 6  | 396 |
| 3  | 399 |
| 1  | 400 |
| 0  | 400 |

run39

# HISTOGRAM OF VARIABLE 2 tsvn

SYMBOL COUNT MEAN ST.DEV.  
X 488 4626.755 478.484  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL             | 15 | 38 | 45 | 68 | 75 | 98 | 185 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | FREQUENCY |
|----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME                 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *3158.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *3388.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *3458.88 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *3688.88 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *3758.88 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *3988.88 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 6         |
| *4858.88 +XXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12        |
| *4288.88 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        |
| *4358.88 +XXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 22        |
| *4588.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 46        |
| *4658.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        |
| *4888.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 78        |
| *4958.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 58        |
| *5188.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 128       |
| *5258.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43        |
| *5488.88 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 163       |
| *5558.88 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 48        |
| *5788.88 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 211       |
| *5858.88 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 51        |
| *6888.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 262       |
| *LAST                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37        |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 299       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 337       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 28        |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 357       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 17        |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 374       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15        |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 389       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 396       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |

run39

HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST. DEV.  
X 488 5558.158 478.985  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL NAME        | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY | INT. CUM. |
|----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|-----------|
| *4050.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 1         |
| *4200.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 3         |
| *4350.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 5         |
| *4500.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 6         | 11        |
| *4650.00 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 19        |
| *4800.00 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        | 43        |
| *4950.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 46        | 89        |
| *5100.00 +XXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 47        | 136       |
| *5250.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 39        | 175       |
| *5400.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 55        | 230       |
| *5550.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 42        | 272       |
| *5700.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        | 313       |
| *5850.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        | 337       |
| *6000.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15        | 352       |
| *6150.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        | 368       |
| *6300.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         | 377       |
| *6450.00 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 379       |
| *6600.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 380       |
| *6750.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 381       |
| *6900.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 382       |
| *LAST                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 383       |

run48

HISTOGRAM OF VARIABLE 1 tsu1

SYMBOL COUNT MEAN ST.DEV.  
X 488 8193.158 228.988  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

INTERVAL NAME 15 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240

```
*7550.00 +
*7600.00 +
*7650.00 +
*7700.00 +XX
*7750.00 +XX
*7800.00 +XXX
*7850.00 +XXX
*7900.00 +XXX
*7950.00 +XXXX
*8000.00 +XXXXXXXX
*8050.00 +XXXXXXXXXX
*8100.00 +XXXXXXXXXX
*8150.00 +XXXXXXXXXXXX
*8200.00 +XXXXXXXXXXXX
*8250.00 +XXXXXXXXXXXX
*8300.00 +XXXXXXXXXXXX
*8350.00 +XXXXXXXXXXXX
*8400.00 +XXXXXXXXXX
*8450.00 +XXXXXXXXXX
*8500.00 +XXXXXX
*8550.00 +XXXXXX
*8600.00 +XXX
*8650.00 +X
*8700.00 +X
*8750.00 +X
*8800.00 +X
*8850.00 +
*LAST
```

15 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240

run48

| HISTOGRAM OF VARIABLE |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2  | tsvn | SYMBOL COUNT |    |    |    |     |     |     |     |     |     |     |     |     |     |                | MEAN | ST.DEV. | EACH SYMBOL REPRESENTS |   |   |   |   |   |   |   |   |   |   |   |           |   |   | FREQUENCY |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|------|--------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|------|---------|------------------------|---|---|---|---|---|---|---|---|---|---|---|-----------|---|---|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| INTERVAL              |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X  |      |              |    |    |    |     |     |     |     |     |     |     |     |     | 488 | 3 OBSERVATIONS |      |         |                        |   |   |   |   |   |   |   |   |   |   |   | INT. CUM. |   |   |           |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| NAME                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 15 | 38   | 45           | 68 | 75 | 98 | 185 | 128 | 135 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248            | 8    | 1       | 1                      | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1         | 1 | 1 | 1         | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |

run48

# HISTOGRAM OF VARIABLE 3 tsyh

MEAN 9834.551  
ST.DEV. 149.961  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL    | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
|-------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| *9350.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 0   |
| *9400.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *9450.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *9500.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 0   |
| *9550.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *9600.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 14  |
| *9650.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 17  |
| *9700.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 9   |
| *9750.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 26  |
| *9800.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 16  |
| *9850.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 42  |
| *9900.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 30  |
| *9950.00 +  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 72  |
| *10000.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 47  |
| *10050.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 119 |
| *10100.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 47  |
| *10150.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 166 |
| *10200.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 49  |
| *10250.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 215 |
| *10300.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 55  |
| *10350.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 270 |
| *10400.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 42  |
| *10450.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 312 |
| *10500.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 36  |
| *10550.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 348 |
| *10600.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 21  |
| *10650.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 369 |
| *10700.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 20  |
| *10750.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 389 |
| *10800.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 4   |
| *10850.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 393 |
| *10900.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *10950.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 395 |
| *11000.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 4   |
| *11050.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399 |
| *11100.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *11150.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 400 |
| *11200.00 + |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 0   |
| *LAST       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |

run41

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST.DEV.  
X 488 6884.579 476.274  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL<br>NAME     | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY<br>INT. CUM. |
|----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|
| *4500.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *4650.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *4800.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *4950.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2                      |
| *5100.00 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4                      |
| *5250.00 +XXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 10                     |
| *5400.00 +XXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15                     |
| *5550.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29                     |
| *5700.00 +XXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43                     |
| *5850.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 64                     |
| *6000.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 107                    |
| *6150.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 153                    |
| *6300.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 198                    |
| *6450.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 239                    |
| *6600.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 282                    |
| *6750.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 324                    |
| *6900.00 +XXXXXXX    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 368                    |
| *7050.00 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 389                    |
| *7200.00 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 397                    |
| *7350.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399                    |
| *7500.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399                    |
| *7650.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *LAST                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488                    |

run41

# HISTOGRAM OF VARIABLE 2 tsvn

SYMBOL COUNT MEAN ST.DEV.  
X 488 6868.333 469.786  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL         | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY |
|------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *5400.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *5500.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *5600.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *5700.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *5800.00 +XX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5         |
| *5900.00 +XXX    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11        |
| *6000.00 +XXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        |
| *6100.00 +XXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13        |
| *6200.00 +XXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 31        |
| *6300.00 +XXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 17        |
| *6400.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 48        |
| *6500.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        |
| *6600.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 72        |
| *6700.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 40        |
| *6800.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 112       |
| *6900.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 50        |
| *7000.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 162       |
| *7100.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 44        |
| *7200.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 251       |
| *7300.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 46        |
| *7400.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 297       |
| *7500.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 44        |
| *7600.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 341       |
| *7700.00 +XXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 371       |
| *7800.00 +XXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        |
| *7900.00 +XXX    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 387       |
| *8000.00 +XX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *8100.00 +X      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 395       |
| *8200.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *8300.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 397       |
| *8400.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *8500.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399       |
| *8600.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *8700.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399       |
| *8800.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *8900.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *9000.00 +       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
| *LAST            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |

run41

| HISTOGRAM OF VARIABLE 3 tsvh          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
|---------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| SYMBOL COUNT MEAN ST.DEV.             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| X 488 7645.939 468.285                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| EACH SYMBOL REPRESENTS 3 OBSERVATIONS |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| INTERVAL                              | 15 | 38 | 45 | 68 | 75 | 98 | 105 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 |
| *6158.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *6388.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *6458.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *6688.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *6758.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 4   |
| *6988.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 6   |
| *7058.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *7288.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 14  |
| *7358.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 26  |
| *7588.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 18  |
| *7658.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 44  |
| *7888.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 21  |
| *7958.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 65  |
| *8188.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 48  |
| *8258.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 185 |
| *8488.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 43  |
| *8558.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 148 |
| *8788.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 58  |
| *8858.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 198 |
| *9088.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 44  |
| *9158.88                              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 242 |
| *LAST                                 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 46  |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 288 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 47  |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 335 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 31  |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 366 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 28  |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 386 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 18  |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 396 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 397 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 488 |
|                                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |

run42

| HISTOGRAM OF VARIABLE  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1 tsv1 |           |              |  |         |  |
|------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-----------|--------------|--|---------|--|
| SYMBOL COUNT           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | MEAN   |           | ST. DEV.     |  |         |  |
| X                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 400    |           | 3806.982     |  | 535.560 |  |
| EACH SYMBOL REPRESENTS |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 3      |           | OBSERVATIONS |  |         |  |
| INTERVAL               | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240    | FREQUENCY |              |  |         |  |
| NAME                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | INT. CUM. |              |  |         |  |
| *2100.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 0         |              |  |         |  |
| *2250.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 1         |              |  |         |  |
| *2400.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 1         |              |  |         |  |
| *2550.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 0         |              |  |         |  |
| *2700.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 2         |              |  |         |  |
| *2850.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 3         |              |  |         |  |
| *3000.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 4         |              |  |         |  |
| *3150.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 7         |              |  |         |  |
| *3300.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 4         |              |  |         |  |
| *3450.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 9         |              |  |         |  |
| *3600.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 16        |              |  |         |  |
| *3750.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 23        |              |  |         |  |
| *3900.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 7         |              |  |         |  |
| *4050.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 21        |              |  |         |  |
| *4200.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 22        |              |  |         |  |
| *4350.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 26        |              |  |         |  |
| *4500.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 39        |              |  |         |  |
| *4650.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 37        |              |  |         |  |
| *4800.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 41        |              |  |         |  |
| *4950.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 183       |              |  |         |  |
| *5100.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 51        |              |  |         |  |
| *5250.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 234       |              |  |         |  |
| *LAST                  | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 45        |              |  |         |  |

FREQUENCY  
INT. CUM.

1 1  
1 1  
2 3  
4 7  
9 16  
7 23  
21 44  
22 66  
39 105  
37 142  
41 183  
51 234  
45 279  
28 307  
26 333  
23 356  
19 375  
11 386  
6 392  
6 398  
2 400  
2 400

run42

# HISTOGRAM OF VARIABLE 2 tsun

MEAN 4627.875  
ST.DEV. 539.358  
3 OBSERVATIONS

SOURCE REPRESENTS  
X 488

FREQUENCY  
INT. CUM.

| INTERVAL | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
|----------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NAME     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *2850.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3000.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3150.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3300.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3450.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3600.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3750.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3900.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4050.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4200.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4350.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4500.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4650.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4800.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4950.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5100.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5250.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5400.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5550.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5700.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5850.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6000.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *LAST    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |

run42

HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST. DEV.  
X 488 5448.331 532.267  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL                 | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |                        |
|--------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|
| NAME                     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | FREQUENCY<br>INT. COM. |
| *3750.00 +               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0                      |
| *3900.00 +               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *4050.00 +X              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *4200.00 +               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2                      |
| *4350.00 +X              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *4500.00 +XXX            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4                      |
| *4650.00 +XXX            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *4800.00 +XXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2                      |
| *4950.00 +XXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *5100.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 14                     |
| *5250.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 10                     |
| *5400.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24                     |
| *5550.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 22                     |
| *5700.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 46                     |
| *5850.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 20                     |
| *6000.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 66                     |
| *6150.00 +XXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 42                     |
| *6300.00 +XXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 108                    |
| *6450.00 +XXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 48                     |
| *6600.00 +XXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 148                    |
| *6750.00 +               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 35                     |
| *6900.00 +X              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 183                    |
| *LAST                    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 49                     |

run43

| HISTOGRAM OF VARIABLE  |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | 1 tsyl       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| EACH SYMBOL REPRESENTS |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | SYMBOL COUNT |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| X                      |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | 488          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MEAN                   |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | 8689.436     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ST. DEV.               |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | 241.858      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 OBSERVATIONS         |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| INTERVAL               |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | FREQUENCY    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NAME                   |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | INT. CUM.    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15                     | 38          | 45 | 68 | 75 | 98 | 105 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | 8   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8058.88               | +           |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8188.88               | +X          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8158.88               | +X          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8288.88               | +X          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8258.88               | +XX         |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 6   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8388.88               | +XXXX       |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8358.88               | +XX         |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 17  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8488.88               | +XXXX       |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8458.88               | +XXXXX      |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 34  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8588.88               | +XXXXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8558.88               | +XXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8688.88               | +XXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8658.88               | +XXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 34  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8788.88               | +XXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8758.88               | +XXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 45  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8888.88               | +XXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8858.88               | +XXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 21  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8988.88               | +XXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 82  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8958.88               | +XXXXXX     |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 34  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9088.88               | +XXXX       |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 116 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9058.88               | +XXX        |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 27  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9188.88               | +XX         |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 143 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9158.88               | +X          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9288.88               | +X          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 172 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9258.88               | +XX         |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 31  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9388.88               | +XX         |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 283 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9358.88               | +           |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9488.88               | +           |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 232 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *LAST                  | +           |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 267 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 35  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 35  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 382 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 326 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 22  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 348 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 361 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 374 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 384 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 389 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 392 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 394 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1   |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                        |             |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488 |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

FREQUENCY  
INT. CUM.

run43

# HISTOGRAM OF VARIABLE 2 tsvn

MEAN ST.DEV.  
9517.468 196.766  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY | INT. CUM. |
|----------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|-----------|
| NAME     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |           |
| *8900.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 8         |
| *8950.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 9         |
| *9000.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 10        |
| *9050.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         | 13        |
| *9100.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         | 17        |
| *9150.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5         | 22        |
| *9200.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         | 29        |
| *9250.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         | 38        |
| *9300.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11        | 49        |
| *9350.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15        | 64        |
| *9400.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 23        | 87        |
| *9450.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 35        | 122       |
| *9500.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        | 163       |
| *9550.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        | 204       |
| *9600.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 28        | 232       |
| *9650.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 49        | 281       |
| *9700.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        | 322       |
| *9750.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 32        | 354       |
| *9800.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29        | 383       |
| *9850.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        | 399       |
| *9900.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12        | 411       |
| *9950.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         | 418       |
| *10000.0 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 420       |
| *10050.0 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 422       |
| *10100.0 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         | 426       |
| *LAST    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 427       |

HISTOGRAM OF VARIABLE 3 tsyh

| SYMBOL                 | COUNT | MEAN           | ST-DEV. |
|------------------------|-------|----------------|---------|
| X                      | 456   | 10799.718      | 163.162 |
| EACH SYMBOL REPRESENTS |       | 3 OBSERVATIONS |         |

[illegible]

run44

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST.DEV.  
X 488 6286.248 517.897  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL<br>NAME     | 15 | 38 | 45 | 68 | 75 | 98 | 105 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | FREQUENCY<br>INT. CUM. |
|----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|
| *4888.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *4958.88 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2                      |
| *5188.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2                      |
| *5258.88 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *5488.88 +XXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *5558.88 +XXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11                     |
| *5788.88 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 22                     |
| *5858.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15                     |
| *6088.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37                     |
| *6158.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18                     |
| *6388.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 47                     |
| *6458.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 32                     |
| *6688.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 79                     |
| *6758.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37                     |
| *6988.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 116                    |
| *7058.88 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43                     |
| *7288.88 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 159                    |
| *7358.88 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43                     |
| *7588.88 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 282                    |
| *7658.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37                     |
| *7888.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 239                    |
| *7958.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41                     |
| *8188.88 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 288                    |
| *LAST                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 39                     |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 319                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 36                     |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 355                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24                     |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 379                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 387                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 6                      |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 393                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5                      |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 398                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488                    |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |

run44

HISTOGRAM OF VARIABLE 2 tsyn

SYMBOL COUNT MEAN ST. DEV.  
X 488 7878.688 511.486  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL | 15 | 38 | 45 | 68 | 75 | 98 | 105 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 |
|----------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NAME     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5558.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *5788.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *5858.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *6088.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *6158.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 3   |
| *6388.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 5   |
| *6458.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *6688.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 12  |
| *6758.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 28  |
| *6988.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 18  |
| *7058.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 38  |
| *7288.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 17  |
| *7358.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 47  |
| *7588.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 28  |
| *7658.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 34  |
| *7888.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 181 |
| *7958.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 46  |
| *8188.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 147 |
| *8258.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 37  |
| *8488.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 184 |
| *8558.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 49  |
| *8788.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 233 |
| *8858.88 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 33  |
| *LAST    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 266 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 45  |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 311 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 37  |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 348 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 29  |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 377 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 18  |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 387 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 9   |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 396 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 397 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 399 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 488 |
|          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |

run44

HISTOGRAM OF VARIABLE 3 tsuh

SYMBOL COUNT MEAN ST.DEV.  
X 488 7796.525 582.324  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL NAME                | 15 | 38 | 45 | 68 | 75 | 98 | 105 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | FREQUENCY | INT. CUM. |
|------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|-----------|
| *6388.88 +                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 8         |
| *6458.88 +                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 9         |
| *6688.88 +X                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 11        |
| *6758.88 +XX                 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         | 18        |
| *6988.88 +XXX                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        | 36        |
| *7858.88 +XXXX               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13        | 49        |
| *7288.88 +XXXXXX             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 17        | 66        |
| *7358.88 +XXXXXXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 25        | 91        |
| *7588.88 +XXXXXXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37        | 128       |
| *7658.88 +XXXXXXXXXXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43        | 171       |
| *7888.88 +XXXXXXXXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        | 209       |
| *7958.88 +XXXXXXXXXXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 48        | 257       |
| *8188.88 +XXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 48        | 305       |
| *8258.88 +XXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        | 346       |
| *8488.88 +XXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 34        | 380       |
| *8558.88 +XXXXXXXXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 26        | 406       |
| *8788.88 +XXX                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         | 415       |
| *8858.88 +XX                 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5         | 420       |
| *9888.88 +X                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 422       |
| *9158.88 +                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 423       |
| *9388.88 +                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 431       |
| *9458.88 +                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 439       |
| *LAST                        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 447       |

run45

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST-DEV.  
X 488 3873.588 585.742  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL             | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY |
|----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME                 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *1950.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *2100.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *2250.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *2400.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *2550.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
| *2700.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         |
| *2850.00 +XXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11        |
| *3000.00 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        |
| *3150.00 +XXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 25        |
| *3300.00 +XXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43        |
| *3450.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 62        |
| *3600.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 94        |
| *3750.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11        |
| *3900.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        |
| *4050.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43        |
| *4200.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 254       |
| *4350.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 292       |
| *4500.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 311       |
| *4650.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 28        |
| *4800.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 339       |
| *4950.00 +XXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 19        |
| *5100.00 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 358       |
| *5250.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 17        |
| *5400.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 375       |
| *LAST                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11        |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 306       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 6         |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 392       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 396       |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
|                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |

| HISTOGRAM OF VARIABLE | 2  | 3  | 4  | 5  | 6  | 7  | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35  | 36  | 37  | 38  | 39  | 40  | 41  | 42  | 43  | 44  | 45  | 46  | 47  | 48  | 49  | 50  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| INTERVAL              | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | 255 | 270 | 285 | 300 | 315 | 330 | 345 | 360 | 375 | 390 | 405 | 420 | 435 | 450 | 465 | 480 | 495 | 510 | 525 | 540 | 555 | 570 | 585 | 600 | 615 | 630 | 645 | 660 | 675 | 690 | 705 | 720 | 735 | 750 | 765 | 780 | 795 | 810 | 825 | 840 | 855 | 870 | 885 | 900 | 915 | 930 | 945 | 960 | 975 | 990 | 1005 | 1020 | 1035 | 1050 | 1065 | 1080 | 1095 | 1110 | 1125 | 1140 | 1155 | 1170 | 1185 | 1200 | 1215 | 1230 | 1245 | 1260 | 1275 | 1290 | 1305 | 1320 | 1335 | 1350 | 1365 | 1380 | 1395 | 1410 | 1425 | 1440 | 1455 | 1470 | 1485 | 1500 | 1515 | 1530 | 1545 | 1560 | 1575 | 1590 | 1605 | 1620 | 1635 | 1650 | 1665 | 1680 | 1695 | 1710 | 1725 | 1740 | 1755 | 1770 | 1785 | 1800 | 1815 | 1830 | 1845 | 1860 | 1875 | 1890 | 1905 | 1920 | 1935 | 1950 | 1965 | 1980 | 1995 | 2010 | 2025 | 2040 | 2055 | 2070 | 2085 | 2100 | 2115 | 2130 | 2145 | 2160 | 2175 | 2190 | 2205 | 2220 | 2235 | 2250 | 2265 | 2280 | 2295 | 2310 | 2325 | 2340 | 2355 | 2370 | 2385 | 2400 | 2415 | 2430 | 2445 | 2460 | 2475 | 2490 | 2505 | 2520 | 2535 | 2550 | 2565 | 2580 | 2595 | 2610 | 2625 | 2640 | 2655 | 2670 | 2685 | 2700 | 2715 | 2730 | 2745 | 2760 | 2775 | 2790 | 2805 | 2820 | 2835 | 2850 | 2865 | 2880 | 2895 | 2910 | 2925 | 2940 | 2955 | 2970 | 2985 | 3000 | 3015 | 3030 | 3045 | 3060 | 3075 | 3090 | 3105 | 3120 | 3135 | 3150 | 3165 | 3180 | 3195 | 3210 | 3225 | 3240 | 3255 | 3270 | 3285 | 3300 | 3315 | 3330 | 3345 | 3360 | 3375 | 3390 | 3405 | 3420 | 3435 | 3450 | 3465 | 3480 | 3495 | 3510 | 3525 | 3540 | 3555 | 3570 | 3585 | 3600 | 3615 | 3630 | 3645 | 3660 | 3675 | 3690 | 3705 | 3720 | 3735 | 3750 | 3765 | 3780 | 3795 | 3810 | 3825 | 3840 | 3855 | 3870 | 3885 | 3900 | 3915 | 3930 | 3945 | 3960 | 3975 | 3990 | 4005 | 4020 | 4035 | 4050 | 4065 | 4080 | 4095 | 4110 | 4125 | 4140 | 4155 | 4170 | 4185 | 4200 | 4215 | 4230 | 4245 | 4260 | 4275 | 4290 | 4305 | 4320 | 4335 | 4350 | 4365 | 4380 | 4395 | 4410 | 4425 | 4440 | 4455 | 4470 | 4485 | 4500 | 4515 | 4530 | 4545 | 4560 | 4575 | 4590 | 4605 | 4620 | 4635 | 4650 | 4665 | 4680 | 4695 | 4710 | 4725 | 4740 | 4755 | 4770 | 4785 | 4800 | 4815 | 4830 | 4845 | 4860 | 4875 | 4890 | 4905 | 4920 | 4935 | 4950 | 4965 | 4980 | 4995 | 5010 | 5025 | 5040 | 5055 | 5070 | 5085 | 5100 | 5115 | 5130 | 5145 | 5160 | 5175 | 5190 | 5205 | 5220 | 5235 | 5250 | 5265 | 5280 | 5295 | 5310 | 5325 | 5340 | 5355 | 5370 | 5385 | 5400 | 5415 | 5430 | 5445 | 5460 | 5475 | 5490 | 5505 | 5520 | 5535 | 5550 | 5565 | 5580 | 5595 | 5610 |

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| HISTOGRAM OF VARIABLE 3 tsvh          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |           |
|---------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|-----------|
| SYMBOL COUNT MEAN ST.DEV.             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |           |
| X 488 5383.851 582.328                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |           |
| EACH SYMBOL REPRESENTS 3 OBSERVATIONS |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |           |
| INTERVAL                              | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY | INT. CUM. |
| NAME                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 2         |
| *3600.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 3         |
| *3750.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         | 5         |
| *3900.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 6         |
| *4050.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         | 15        |
| *4200.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         | 22        |
| *4350.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 21        | 43        |
| *4500.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        | 61        |
| *4650.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 32        | 93        |
| *4800.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        | 134       |
| *4950.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 31        | 165       |
| *5100.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 39        | 204       |
| *5250.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 42        | 246       |
| *5400.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        | 284       |
| *5550.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 32        | 316       |
| *5700.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 26        | 342       |
| *5850.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15        | 357       |
| *6000.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        | 373       |
| *6150.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13        | 386       |
| *6300.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         | 393       |
| *6450.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         | 397       |
| *6600.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         | 400       |
| *6750.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         | 408       |
| *6900.00                              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |           |
| *LAST                                 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |           |

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HISTOGRAM OF VARIABLE 1 tsv1

MEAN 8815.651  
ST.DEV. 287.555  
3 OBSERVATIONS

SYMBOL COUNT  
X 488  
EACH SYMBOL REPRESENTS

FREQUENCY  
INT. CUM.

| INTERVAL | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |    |
|----------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| NAME     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |
| *7300.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0  |
| *7375.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0  |
| *7450.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1  |
| *7525.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1  |
| *7600.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12 |
| *7675.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13 |
| *7750.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12 |
| *7825.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 28 |
| *7900.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 56 |
| *7975.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 47 |
| *8050.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 52 |
| *8125.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 68 |
| *8200.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 31 |
| *8275.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37 |
| *8350.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24 |
| *8425.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11 |
| *8500.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4  |
| *8575.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3  |
| *8650.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2  |
| *8725.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0  |
| *8800.00 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0  |
| *LAST    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0  |

[illegible]

### HISTOGRAM OF VARIABLE 3 tsvh

|                        | SYMBOL | COUNT | MEAN     | ST. DEV.     |
|------------------------|--------|-------|----------|--------------|
|                        | X      | 488   | 8999.833 | 153.849      |
| EACH SYMBOL REPRESENTS |        |       | 3        | OBSERVATIONS |

| INTERVAL  | 15        | 30       | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY |
|-----------|-----------|----------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME      | INT. CUM. |          |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |
| *8275.00  | +         |          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *8350.00  | +         |          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *8425.00  | +         |          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *8500.00  | +         |          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *8575.00  | +         |          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *8650.00  | +         |          |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *8725.00  | +         | XXXXX    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *8800.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        |
| *8875.00  | +         | XXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        |
| *8950.00  | +         | XXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 36        |
| *9025.00  | +         | XXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 86        |
| *9100.00  | +         | XXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 69        |
| *9175.00  | +         | XXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 155       |
| *9250.00  | +         | XXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 78        |
| *9325.00  | +         | XXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 225       |
| *9400.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 78        |
| *9475.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 295       |
| *9550.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 54        |
| *9625.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 349       |
| *9700.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        |
| *9775.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15        |
| *9850.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 394       |
| *9925.00  | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *10000.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *10075.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
| *10150.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *10225.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *10300.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
| *10375.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *10450.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *10525.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
| *10600.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *10675.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *10750.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
| *10825.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *10900.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *10975.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
| *11050.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *11125.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *11200.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
| *11275.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *11350.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *11425.00 | +         | XXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     |           |

run47

| HISTOGRAM OF VARIABLE  |    |    |    |    |    |    |     |     |     | 1   | tsv1 | SYMBOL |     | COUNT | MEAN         | ST. DEV. | FREQUENCY |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------------|----|----|----|----|----|----|-----|-----|-----|-----|------|--------|-----|-------|--------------|----------|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|                        |    |    |    |    |    |    |     |     |     | X   |      |        |     | 488   | 6879.441     | 424.883  | INT. COM. |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| EACH SYMBOL REPRESENTS |    |    |    |    |    |    |     |     |     |     |      |        |     | 3     | OBSERVATIONS |          |           |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| INTERVAL               | 15 | 38 | 45 | 68 | 75 | 98 | 105 | 128 | 135 | 158 | 165  | 188    | 195 | 218   | 225          | 248      | B         | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B |

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| HISTOGRAM OF VARIABLE  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2  |  | SYMBOL |  | COUNT    |  | MEAN    |  | ST. DEV.  |  | FREQUENCY |  |        |  |         |  |          |  |           |  |            |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  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| EACH SYMBOL REPRESENTS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X  |  | 488    |  | 6594.195 |  | 419.579 |  | INT. CUM. |  |           |  |        |  |         |  |          |  |           |  |            |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |      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  |  |             |  |
| INTERVAL               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 15 |  | 30     |  | 45       |  | 60      |  | 75        |  | 90        |  | 105    |  | 120     |  | 135      |  | 150       |  | 165        |  | 180         |  | 195         |  | 210         |  | 225         |  | 240         |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  | 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      |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |             |  |
| NAME                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | +X |  | +X     |  | +X       |  | +XXX    |  | +XXX      |  | +XXXX     |  | +XXXXX |  | +XXXXXX |  | +XXXXXXX |  | +XXXXXXXX |  | +XXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | 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+XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  | +XXXXXXXXXX |  |

FREQUENCY  
INT. CUM.

2 2  
4 4  
10 10  
14 14  
17 17  
36 36  
44 44  
56 56  
51 51  
42 42  
53 53  
48 48  
19 19  
8 8  
2 2  
1 1  
0 0  
1 1

run47

# HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST.DEV.  
X 488 7863.596 413.655  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| EACH SYMBOL REPRESENTS 3 OBSERVATIONS |          |                      |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
|---------------------------------------|----------|----------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| INTERVAL                              | 15       | 30                   | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
| NAME                                  | *5650.00 | +                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5800.00                              | +        |                      |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5950.00                              | +        |                      |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6100.00                              | +        | XX                   |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6250.00                              | +        | XX                   |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6400.00                              | +        | XXXX                 |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6550.00                              | +        | XXXXXX               |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6700.00                              | +        | XXXXXXXXXX           |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6850.00                              | +        | XXXXXXXXXXXXXXXXXX   |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7000.00                              | +        | XXXXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7150.00                              | +        | XXXXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7300.00                              | +        | XXXXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7450.00                              | +        | XXXXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7600.00                              | +        | XXXXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7750.00                              | +        | XXXXXX               |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7900.00                              | +        | XXX                  |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8050.00                              | +        |                      |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8200.00                              | +        | X                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8350.00                              | +        |                      |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8500.00                              | +        |                      |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8650.00                              | +        |                      |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *LAST                                 | +        |                      |    |    |    |    |     |     |     |     |     |     |     |     |     |     |

run48

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST.DEV.  
X 400 4134.303 477.525  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL             | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY |
|----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME                 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *2500.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *2600.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *2700.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *2800.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *2900.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *3000.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *3100.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *3200.00 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *3300.00 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
| *3400.00 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         |
| *3500.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13        |
| *3600.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         |
| *3700.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 22        |
| *3800.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 21        |
| *3900.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43        |
| *4000.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 27        |
| *4100.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 70        |
| *4200.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 46        |
| *4300.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 116       |
| *4400.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 42        |
| *4500.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 158       |
| *4600.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 52        |
| *4700.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 210       |
| *4800.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 51        |
| *4900.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 261       |
| *5000.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37        |
| *5100.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 298       |
| *5200.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 32        |
| *5300.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 330       |
| *5400.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        |
| *5500.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 354       |
| *5600.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 20        |
| *5700.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 374       |
| *5800.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 15        |
| *5900.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 389       |
| *6000.00 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         |
| *6100.00 +XX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 396       |
| *6200.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *6300.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399       |
| *6400.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *LAST                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 400       |

run48

| HISTOGRAM OF VARIABLE |                     | 2 tsvn                                                    |  | SYMBOL COUNT   |  | MEAN     |  | ST.DEV. |  |
|-----------------------|---------------------|-----------------------------------------------------------|--|----------------|--|----------|--|---------|--|
| INTERVAL              |                     | EACH SYMBOL REPRESENTS                                    |  | X              |  | 4626.755 |  | 478.484 |  |
| NAME                  |                     | 15 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 |  | 3 OBSERVATIONS |  |          |  |         |  |
| *2950.00              | +                   |                                                           |  |                |  |          |  |         |  |
| *3100.00              | +                   |                                                           |  |                |  |          |  |         |  |
| *3250.00              | +                   |                                                           |  |                |  |          |  |         |  |
| *3400.00              | +X                  |                                                           |  |                |  |          |  |         |  |
| *3550.00              | +                   |                                                           |  |                |  |          |  |         |  |
| *3700.00              | +XXX                |                                                           |  |                |  |          |  |         |  |
| *3850.00              | +XXX                |                                                           |  |                |  |          |  |         |  |
| *4000.00              | +XXXXXX             |                                                           |  |                |  |          |  |         |  |
| *4150.00              | +XXXXXX             |                                                           |  |                |  |          |  |         |  |
| *4300.00              | +XXXXXXXXXX         |                                                           |  |                |  |          |  |         |  |
| *4450.00              | +XXXXXXXXXXXXXXXXXX |                                                           |  |                |  |          |  |         |  |
| *4600.00              | +XXXXXXXXXXXXXXXXXX |                                                           |  |                |  |          |  |         |  |
| *4750.00              | +XXXXXXXXXXXXXXXXXX |                                                           |  |                |  |          |  |         |  |
| *4900.00              | +XXXXXXXXXXXXXXXXXX |                                                           |  |                |  |          |  |         |  |
| *5050.00              | +XXXXXXXXXXXX       |                                                           |  |                |  |          |  |         |  |
| *5200.00              | +XXXXXXXXXX         |                                                           |  |                |  |          |  |         |  |
| *5350.00              | +XXXXXX             |                                                           |  |                |  |          |  |         |  |
| *5500.00              | +XXXX               |                                                           |  |                |  |          |  |         |  |
| *5650.00              | +X                  |                                                           |  |                |  |          |  |         |  |
| *5800.00              | +X                  |                                                           |  |                |  |          |  |         |  |
| *5950.00              | +                   |                                                           |  |                |  |          |  |         |  |
| *LAST                 | +                   |                                                           |  |                |  |          |  |         |  |

FREQUENCY  
INT. CUM.

0 0 1 1 2 2 1 1 8 8 17 22 37 59 96 151 193 242 298 325 349 371 384 395 397 400 400

run48

# HISTOGRAM OF VARIABLE 3 tswh

SYMBOL COUNT MEAN ST.DEV.  
X 488 5118.488 475.262  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL                         | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY |
|----------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME                             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *3550.00 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *3700.00 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *3850.00 +X                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *4000.00 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *4150.00 +X                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *4300.00 +XXX                    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 6         |
| *4450.00 +XXXX                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        |
| *4600.00 +XXXXXXX                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12        |
| *4750.00 +XXXXXXXXXX             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 28        |
| *4900.00 +XXXXXXXXXXXXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        |
| *5050.00 +XXXXXXXXXXXXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 52        |
| *5200.00 +XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 35        |
| *5350.00 +XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 87        |
| *5500.00 +XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 49        |
| *5650.00 +XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 136       |
| *5800.00 +XXXXXXXXXXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        |
| *5950.00 +XXX                    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 177       |
| *6100.00 +XXXXX                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 55        |
| *6250.00 +X                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 232       |
| *6400.00 +X                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 49        |
| *6550.00 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 281       |
| *LAST                            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 35        |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 316       |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29        |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 345       |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 369       |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 377       |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 393       |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 397       |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
|                                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |

run43

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST.DEV.  
X 400 8637.400 212.885  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL             | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY |
|----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME                 |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *7900.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *7975.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *8050.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *8125.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *8200.00 +XXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         |
| *8275.00 +XXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12        |
| *8350.00 +XXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 23        |
| *8425.00 +XXXXXXX    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 34        |
| *8500.00 +XXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 25        |
| *8575.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 59        |
| *8650.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 45        |
| *8725.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 184       |
| *8800.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 52        |
| *8875.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 156       |
| *8950.00 +XXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 52        |
| *9025.00 +XXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 264       |
| *9100.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 48        |
| *9175.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 312       |
| *9250.00 +X          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37        |
| *9325.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 349       |
| *9400.00 +           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 23        |
| *LAST                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 372       |

run49

| HISTOGRAM OF VARIABLE |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | 2 tsyn                 |  | SYMBOL COUNT   |  | MEAN     |  | ST. DEV. |  | FREQUENCY |  |
|-----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|--|----------------|--|----------|--|----------|--|-----------|--|
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | X                      |  | 487            |  | 9898.424 |  | 184.223  |  | INT. CUM. |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     | EACH SYMBOL REPRESENTS |  | 3 OBSERVATIONS |  |          |  |          |  |           |  |
| INTERVAL              | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | #   |                        |  |                |  |          |  |          |  |           |  |
| *8425.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1   |                        |  |                |  |          |  |          |  |           |  |
| *8500.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1   |                        |  |                |  |          |  |          |  |           |  |
| *8575.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1   |                        |  |                |  |          |  |          |  |           |  |
| *8650.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2   |                        |  |                |  |          |  |          |  |           |  |
| *8725.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9   |                        |  |                |  |          |  |          |  |           |  |
| *8800.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11  |                        |  |                |  |          |  |          |  |           |  |
| *8875.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13  |                        |  |                |  |          |  |          |  |           |  |
| *8950.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24  |                        |  |                |  |          |  |          |  |           |  |
| *9025.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18  |                        |  |                |  |          |  |          |  |           |  |
| *9100.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 42  |                        |  |                |  |          |  |          |  |           |  |
| *9175.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38  |                        |  |                |  |          |  |          |  |           |  |
| *9250.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 88  |                        |  |                |  |          |  |          |  |           |  |
| *9325.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 61  |                        |  |                |  |          |  |          |  |           |  |
| *9400.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 141 |                        |  |                |  |          |  |          |  |           |  |
| *9475.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 59  |                        |  |                |  |          |  |          |  |           |  |
| *9550.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 249 |                        |  |                |  |          |  |          |  |           |  |
| *9625.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 78  |                        |  |                |  |          |  |          |  |           |  |
| *9700.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 278 |                        |  |                |  |          |  |          |  |           |  |
| *9775.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 48  |                        |  |                |  |          |  |          |  |           |  |
| *9850.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 318 |                        |  |                |  |          |  |          |  |           |  |
| *9925.00              | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 358 |                        |  |                |  |          |  |          |  |           |  |
| *LAST                 | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 48  |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 21  |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 379 |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 14  |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 393 |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4   |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 397 |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2   |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399 |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1   |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 480 |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8   |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 489 |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8   |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488 |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8   |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 498 |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8   |                        |  |                |  |          |  |          |  |           |  |
|                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488 |                        |  |                |  |          |  |          |  |           |  |

run49

# HISTOGRAM OF VARIABLE 3 tsyh

SYMBOL COUNT MEAN ST.DEV.  
X 488 9493.891 162.986  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL<br>NAME                 | 15 | 38 | 45 | 68 | 75 | 98 | 185 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | FREQUENCY<br>INT. CUM. |
|----------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|
| *8725.88 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *8888.88 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *8875.88 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *8958.88 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *9825.88 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *9188.88 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1                      |
| *9175.88 +XXXX                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12                     |
| *9258.88 +XXXXX                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16                     |
| *9325.88 +XXXXXXXX               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38                     |
| *9488.88 +XXXXXXXXXXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 58                     |
| *9475.88 +XXXXXXXXXXXXXXXX       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 64                     |
| *9558.88 +XXXXXXXXXXXXXXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 73                     |
| *9625.88 +XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 61                     |
| *9788.88 +XXXXXXXXXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 44                     |
| *9775.88 +XXXXXXXXXXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 27                     |
| *9858.88 +XXX                    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *9925.88 +X                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3                      |
| *18888.8 +X                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3                      |
| *18875.8 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *18158.8 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *18225.8 +                       |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |
| *LAST                            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8                      |

run58

HISTOGRAM OF VARIABLE 1 tsv:

SYMBOL COUNT MEAN ST.DEV.  
X 488 6423.168 473.848  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL       | 15 | 38 | 45 | 68 | 75 | 98 | 135 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | FREQUENCY |
|----------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *5088.88 +     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *5158.88 +     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *5388.88 +X    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *5458.88 +XX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *5688.88 +XXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         |
| *5758.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13        |
| *5988.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 22        |
| *6058.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37        |
| *6288.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13        |
| *6358.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 58        |
| *6588.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37        |
| *6658.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 87        |
| *6888.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 42        |
| *6958.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 129       |
| *7188.88 +XXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 47        |
| *7258.88 +XXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 176       |
| *7488.88 +XXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 46        |
| *7558.88 +X    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 222       |
| *7788.88 +     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        |
| *7858.88 +     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 268       |
| *8088.88 +     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 46        |
| *LAST          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 358       |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 27        |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 377       |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 387       |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 396       |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 398       |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399       |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
|                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |

run50

| HISTOGRAM OF VARIABLE  |    |    |    |    |    |    |     |     |     |     |     |     |     |     | 2 tsyn |     | SYMBOL COUNT   |      | MEAN     |  | ST. DEV. |  |  |  |
|------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-----|----------------|------|----------|--|----------|--|--|--|
| EACH SYMBOL REPRESENTS |    |    |    |    |    |    |     |     |     |     |     |     |     |     | X      |     | 488            |      | 6868.333 |  | 469.786  |  |  |  |
|                        |    |    |    |    |    |    |     |     |     |     |     |     |     |     | X      |     | 3 OBSERVATIONS |      |          |  |          |  |  |  |
| INTERVAL               | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225    | 240 | FREQUENCY      | INT. | CUM.     |  |          |  |  |  |
| NAME                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     |                |      |          |  |          |  |  |  |
| *5450.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 8              | 2    | 2        |  |          |  |  |  |
| *5600.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 2              | 2    | 2        |  |          |  |  |  |
| *5750.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 1              | 1    | 3        |  |          |  |  |  |
| *5900.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 6              | 6    | 9        |  |          |  |  |  |
| *6050.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 13             | 22   | 22       |  |          |  |  |  |
| *6200.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 16             | 38   | 38       |  |          |  |  |  |
| *6350.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 13             | 51   | 51       |  |          |  |  |  |
| *6500.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 36             | 87   | 87       |  |          |  |  |  |
| *6650.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 42             | 129  | 129      |  |          |  |  |  |
| *6800.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 41             | 170  | 170      |  |          |  |  |  |
| *6950.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 51             | 221  | 221      |  |          |  |  |  |
| *7100.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 41             | 262  | 262      |  |          |  |  |  |
| *7250.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 49             | 311  | 311      |  |          |  |  |  |
| *7400.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 37             | 348  | 348      |  |          |  |  |  |
| *7550.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 31             | 379  | 379      |  |          |  |  |  |
| *7700.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 9              | 388  | 388      |  |          |  |  |  |
| *7850.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 8              | 396  | 396      |  |          |  |  |  |
| *8000.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 3              | 399  | 399      |  |          |  |  |  |
| *8150.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 8              | 399  | 399      |  |          |  |  |  |
| *8300.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 1              | 400  | 400      |  |          |  |  |  |
| *8450.00               | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 8              | 408  | 408      |  |          |  |  |  |
| *LAST                  | +  |    |    |    |    |    |     |     |     |     |     |     |     |     |        |     | 8              | 408  | 408      |  |          |  |  |  |
|                        | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225    | 240 |                |      |          |  |          |  |  |  |

FREQUENCY  
INT. CUM.

0 0  
2 2  
1 1  
6 3  
13 22  
16 38  
13 51  
36 87  
42 129  
41 170  
51 221  
41 262  
49 311  
37 348  
31 379  
9 388  
8 396  
3 399  
8 399  
1 400  
0 400

### HISTOGRAM OF VARIABLE 3 tsvh

|                        | SAMPLE | MEAN           | ST. DEV. |
|------------------------|--------|----------------|----------|
| SYMBOL COUNT           | X      | 7279.578       | 464.077  |
| EACH SYMBOL REPRESENTS | K      | 3 OBSERVATIONS |          |

**FREQUENCY**  
**INT. CUM.**

[illegible]

run51

| HISTOGRAM OF VARIABLE  |    |                 |    |    |    |    |     |     |     | I tsv1 |     | SYMBOL COUNT |     | MEAN     |     | ST. DEV. |    | FREQUENCY |     |
|------------------------|----|-----------------|----|----|----|----|-----|-----|-----|--------|-----|--------------|-----|----------|-----|----------|----|-----------|-----|
| EACH SYMBOL REPRESENTS |    |                 |    |    |    |    |     |     |     | X      |     | 400          |     | 4199.161 |     | 538.986  |    | INT. CUM. |     |
| INTERVAL               | 15 | 30              | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150    | 165 | 180          | 195 | 210      | 225 | 240      |    |           |     |
| *2300.00               | +  |                 |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 0  | 0         | 0   |
| *2475.00               | +  |                 |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 0  | 0         | 0   |
| *2650.00               | +  |                 |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 1  | 1         | 1   |
| *2825.00               | +  |                 |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 1  | 1         | 2   |
| *3000.00               | +  | X               |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 2  | 2         | 4   |
| *3175.00               | +  | XX              |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 7  | 7         | 11  |
| *3350.00               | +  | XXX             |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 10 | 10        | 21  |
| *3525.00               | +  | XXXX            |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 18 | 18        | 39  |
| *3700.00               | +  | XXXXXX          |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 28 | 28        | 67  |
| *3875.00               | +  | XXXXXXXX        |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 49 | 49        | 116 |
| *4050.00               | +  | XXXXXXXXXX      |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 42 | 42        | 158 |
| *4225.00               | +  | XXXXXXXXXXXX    |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 52 | 52        | 210 |
| *4400.00               | +  | XXXXXXXXXXXXXX  |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 52 | 52        | 262 |
| *4575.00               | +  | XXXXXXXXXXXXXXX |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 40 | 40        | 302 |
| *4750.00               | +  | XXXXXXXXXXXXXXX |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 33 | 33        | 335 |
| *4925.00               | +  | XXXXXXXXXXXX    |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 25 | 25        | 360 |
| *5100.00               | +  | XXXXXXXXXX      |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 18 | 18        | 378 |
| *5275.00               | +  | XXXXX           |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 13 | 13        | 391 |
| *5450.00               | +  | XX              |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 6  | 6         | 397 |
| *5625.00               | +  | X               |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 3  | 3         | 400 |
| *5800.00               | +  |                 |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 0  | 0         | 400 |
| *LAST                  | +  |                 |    |    |    |    |     |     |     |        |     |              |     |          |     |          | 0  | 0         | 400 |

run51

| HISTOGRAM OF VARIABLE | 2 tsyn                                                    | SYMBOL                 | COUNT          | MEAN     | ST.DEV. |        |
|-----------------------|-----------------------------------------------------------|------------------------|----------------|----------|---------|--------|
| INTERVAL              |                                                           | X                      | 468            | 4627.875 | 539.358 |        |
| NAME                  |                                                           | EACH SYMBOL REPRESENTS | 3 OBSERVATIONS |          |         |        |
|                       | 15 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 |                        |                |          |         |        |
| *2650.00 +            |                                                           |                        |                |          |         | 9 0    |
| *2825.00 +            |                                                           |                        |                |          |         | 0 0    |
| *3000.00 +            |                                                           |                        |                |          |         | 1 1    |
| *3175.00 +            |                                                           |                        |                |          |         | 1 2    |
| *3350.00 +X           |                                                           |                        |                |          |         | 2 4    |
| *3525.00 +X           |                                                           |                        |                |          |         | 3 7    |
| *3700.00 +XXX         |                                                           |                        |                |          |         | 10 17  |
| *3875.00 +XXXX        |                                                           |                        |                |          |         | 14 31  |
| *4050.00 +XXXXXX      |                                                           |                        |                |          |         | 23 54  |
| *4225.00 +XXXXXXXX    |                                                           |                        |                |          |         | 34 88  |
| *4400.00 +XXXXXXXXXX  |                                                           |                        |                |          |         | 53 141 |
| *4575.00 +XXXXXXXXXX  |                                                           |                        |                |          |         | 48 181 |
| *4750.00 +XXXXXXXXXX  |                                                           |                        |                |          |         | 59 239 |
| *4925.00 +XXXXXXXXXX  |                                                           |                        |                |          |         | 53 289 |
| *5100.00 +XXXXXXXXXX  |                                                           |                        |                |          |         | 34 323 |
| *5275.00 +XXXXXXXXXX  |                                                           |                        |                |          |         | 26 349 |
| *5450.00 +XXXXXX      |                                                           |                        |                |          |         | 23 372 |
| *5625.00 +XXXX        |                                                           |                        |                |          |         | 12 384 |
| *5800.00 +XXX         |                                                           |                        |                |          |         | 10 394 |
| *5975.00 +XX          |                                                           |                        |                |          |         | 5 399  |
| *6150.00 +            |                                                           |                        |                |          |         | 1 400  |
| *LAST                 |                                                           |                        |                |          |         | 0 400  |

run51

# HISTOGRAM OF VARIABLE 3 tsyh

SYMBOL COUNT MEAN ST. DEV.  
X 488 5855.656 536.362  
E.CH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL<br>NAME          | 15 | 38 | 45 | 68 | 75 | 98 | 185 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 |
|---------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| *3175.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3358.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3525.88 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3788.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *3875.88 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4058.88 +XX              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4225.88 +XXX             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4488.88 +XXXXXX          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4575.88 +XXXXXXXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4758.88 +XXXXXXXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *4925.88 +XXXXXXXXXXXX    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5188.88 +XXXXXXXXXXXXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5275.88 +XXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5458.88 +XXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5625.88 +XXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5888.88 +XXXXXXXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5975.88 +XXXXXX          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6158.88 +XXXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6325.88 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6588.88 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6675.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *LAST                     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |

run52

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST.DEV.  
X 488 9898.886 224.882  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL                  | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY |
|---------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME                      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *8388.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *8375.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *8458.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *8525.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *8608.88 +XX              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *8675.88 +XXX             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         |
| *8758.88 +XXX             |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         |
| *8825.88 +XXXX            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 17        |
| *8908.88 +XXXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 27        |
| *8975.88 +XXXXXXXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 14        |
| *9058.88 +XXXXXXXXXXXX    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 41        |
| *9125.88 +XXXXXXXXXXXXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        |
| *9208.88 +XXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 71        |
| *9275.88 +XXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 45        |
| *9358.88 +XXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 116       |
| *9425.88 +XXXXXXXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 47        |
| *9508.88 +XXXX            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 183       |
| *9575.88 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 52        |
| *9658.88 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 215       |
| *9725.88 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 57        |
| *9808.88 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 272       |
| *LAST                     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43        |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 315       |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 36        |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 351       |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 24        |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 375       |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12        |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 387       |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5         |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 392       |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 396       |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
|                           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |

run52

# HISTOGRAM OF VARIABLE 2 tsyn

MEAN ST.DEV.  
9517.468 196.766

SYMBOL COUNT  
X 488  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL<br>NAME | 15 | 20                 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
|------------------|----|--------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| *8675.00         | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8750.00         | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8825.00         | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8900.00         | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8975.00         | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9050.00         | +  | X                  |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9125.00         | +  | XXX                |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9200.00         | +  | XXXX               |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9275.00         | +  | XXXXX              |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9350.00         | +  | XXXXXXXXXX         |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9425.00         | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9500.00         | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9575.00         | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9650.00         | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9725.00         | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9800.00         | +  | XXXXXXXXXXXX       |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9875.00         | +  | XXXXXXXXXX         |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *9950.00         | +  | X                  |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *10025.00        | +  | XX                 |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *10100.00        | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *10175.00        | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *LAST            |    |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |

0 0 0 0 0 0 0 1 1 3 3 9 12 16 33 59 45 65 57 42 30 18 3 6 1 0 0  
0 0 0 0 0 0 0 1 1 3 3 9 12 16 33 59 45 65 57 42 30 18 3 6 1 0 0

run52

HISTOGRAM OF VARIABLE 3 tsvh

MEAN 9882.267  
ST-DEV. 176.211  
3 OBSERVATIONS

SYMBOL COUNT  
X 488  
EACH SYMBOL REPRESENTS 3

FREQUENCY  
INT. CUM.

| INTERVAL NAME | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY |
|---------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| *9050.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *9125.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *9200.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *9275.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *9350.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *9425.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |
| *9500.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *9575.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 6         |
| *9650.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 13        |
| *9725.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 17        |
| *9800.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 33        |
| *9875.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 62        |
| *9950.00 +    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 132       |
| *10025.00 +   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 68        |
| *10100.00 +   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 71        |
| *10175.00 +   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 56        |
| *10250.00 +   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 42        |
| *10325.00 +   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 21        |
| *10400.00 +   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 10        |
| *10475.00 +   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
| *10550.00 +   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 4         |
| *LAST         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         |

run52

# HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST.DEV.  
X 488 6672.546 515.576  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL | 15 | 30                 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
|----------|----|--------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NAME     |    |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5000.00 | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5175.00 | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5350.00 | +  | X                  |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5525.00 | +  | X                  |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5700.00 | +  | XXXX               |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *5875.00 | +  | XXXXXX             |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6050.00 | +  | XXXX               |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6225.00 | +  | XXXXXXXXXX         |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6400.00 | +  | XXXXXXXXXXXXXX     |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6575.00 | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6750.00 | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *6925.00 | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7100.00 | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7275.00 | +  | XXXXXXXXXXXXXXXXXX |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7450.00 | +  | XXXXXXXXXXXX       |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7625.00 | +  | XXX                |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7800.00 | +  | XX                 |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *7975.00 | +  | X                  |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8150.00 | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8325.00 | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *8500.00 | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
| *LAST    | +  |                    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |

8 8 8 2 2 4 12 16 17 33 12 45 31 76 43 119 52 171 58 221 41 262 58 312 48 352 38 382 8 398 7 397 2 399 8 399 8 399 1 488 8 488

run53

| HISTOGRAM OF VARIABLE  |    |                    |    |    |    |     |     |     |     |     |     |     |     | 2 tsyn |     | SYMBOL COUNT   |   | MEAN     |   | ST. DEV. |    | FREQUENCY<br>INT. CUM. |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
|------------------------|----|--------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-----|----------------|---|----------|---|----------|----|------------------------|----|----|----|----|----|----|----|----|---|---|---|---|---|--|--|--|
| EACH SYMBOL REPRESENTS |    |                    |    |    |    |     |     |     |     |     |     |     |     | X      |     | 488            |   | 7878.688 |   | 511.486  |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| INTERVAL               |    |                    |    |    |    |     |     |     |     |     |     |     |     | NAME   |     | 3 OBSERVATIONS |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| 15                     | 38 | 45                 | 68 | 75 | 98 | 185 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225    | 248 | 8              | 8 | 2        | 1 | 8        | 15 | 16                     | 19 | 48 | 54 | 47 | 51 | 45 | 32 | 11 | 8 | 3 | 8 | 1 | 8 |  |  |  |
| *5358.88               | +  |                    |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *5525.88               | +  |                    |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *5788.88               | +  | X                  |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *5875.88               | +  |                    |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *6858.88               | +  | XXX                |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *6225.88               | +  | XXXXX              |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *6488.88               | +  | XXXXXX             |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *6575.88               | +  | XXXXXXX            |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *6758.88               | +  | XXXXXXXXXX         |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *6925.88               | +  | XXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *7188.88               | +  | XXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *7275.88               | +  | XXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *7458.88               | +  | XXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *7625.88               | +  | XXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *7888.88               | +  | XXXXXXXXXXXXXXXXXX |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *7975.88               | +  | XXXXX              |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *8158.88               | +  | XXXX               |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *8325.88               | +  | X                  |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *8588.88               | +  |                    |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *8675.88               | +  |                    |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *8858.88               | +  |                    |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| *LAST                  | +  |                    |    |    |    |     |     |     |     |     |     |     |     |        |     |                |   |          |   |          |    |                        |    |    |    |    |    |    |    |    |   |   |   |   |   |  |  |  |
| 15                     | 38 | 45                 | 68 | 75 | 98 | 185 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225    | 248 | 8              | 8 | 2        | 1 | 8        | 15 | 16                     | 19 | 48 | 54 | 47 | 51 | 45 | 32 | 11 | 8 | 3 | 8 | 1 | 8 |  |  |  |

run53

| HISTOGRAM OF VARIABLE  |           |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 3 tsyh | SYMBOL |          | COUNT   | MEAN      | ST. DEV. | FREQUENCY |  |
|------------------------|-----------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|--------|----------|---------|-----------|----------|-----------|--|
| EACH SYMBOL REPRESENTS |           |    |    |    |    |    |     |     |     |     |     |     |     |     |     | X      | 488    | 7456.636 | 586.835 | INT. CUM. |          |           |  |
| INTERVAL               | 15        | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240    |        |          |         |           |          |           |  |
| *5875.00               | +         |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 0      |          |         |           |          |           |  |
| *6050.00               | +         |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 1      |          |         |           |          |           |  |
| *6225.00               | +X        |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 2      |          |         |           |          |           |  |
| *5400.00               | +XX       |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 5      |          |         |           |          |           |  |
| *6575.00               | +XXXXX    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 14     |          |         |           |          |           |  |
| *6750.00               | +XXXXXX   |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 17     |          |         |           |          |           |  |
| *6925.00               | +XXXXXX   |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 17     |          |         |           |          |           |  |
| *7100.00               | +XXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 37     |          |         |           |          |           |  |
| *7275.00               | +XXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 52     |          |         |           |          |           |  |
| *7450.00               | +XXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 48     |          |         |           |          |           |  |
| *7625.00               | +XXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 56     |          |         |           |          |           |  |
| *7800.00               | +XXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 42     |          |         |           |          |           |  |
| *7975.00               | +XXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 50     |          |         |           |          |           |  |
| *8150.00               | +XXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 31     |          |         |           |          |           |  |
| *8325.00               | +XXXXX    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 16     |          |         |           |          |           |  |
| *8500.00               | +XXX      |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 8      |          |         |           |          |           |  |
| *8675.00               | +X        |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 2      |          |         |           |          |           |  |
| *8850.00               | +         |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 1      |          |         |           |          |           |  |
| *9025.00               | +         |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 0      |          |         |           |          |           |  |
| *9200.00               | +         |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 1      |          |         |           |          |           |  |
| *9375.00               | +         |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 0      |          |         |           |          |           |  |
| *LAST                  | +         |    |    |    |    |    |     |     |     |     |     |     |     |     |     |        | 0      |          |         |           |          |           |  |

run54

HISTOGRAM OF VARIABLE 1 tsv1

SYMBOL COUNT MEAN ST. DEV.  
X 488 4236.564 588.841  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

FREQUENCY  
INT. CUM.

| INTERVAL                 | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 |
|--------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| *2300.00 +               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *2475.00 +               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 1   |
| *2650.00 +               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *2825.00 +X              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 2   |
| *3000.00 +X              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 3   |
| *3175.00 +XXX            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 7   |
| *3350.00 +XXX            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 8   |
| *3525.00 +XXXXXX         |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 15  |
| *3700.00 +XXXXXXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 19  |
| *3875.00 +XXXXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 24  |
| *4050.00 +XXXXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 44  |
| *4225.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 68  |
| *4400.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 111 |
| *4575.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 151 |
| *4750.00 +XXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 208 |
| *4925.00 +XXXXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 249 |
| *5100.00 +XXXXXXXXXX     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 291 |
| *5275.00 +XXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 322 |
| *5450.00 +XXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 345 |
| *5625.00 +X              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 378 |
| *5800.00 +X              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 381 |
| *LAST                    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 393 |
|                          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 397 |
|                          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 468 |
|                          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 488 |

run54

HISTOGRAM OF VARIABLE 2 tsyn

SYMBOL COUNT MEAN ST.DEV.  
X 488 4629.898 588.532  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL NAME             | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | FREQUENCY | INT. COM. |
|---------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|-----------|
| *2658.00 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         | 0         |
| *2825.00 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 1         |
| *3000.00 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 2         |
| *3175.00 +                |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         | 3         |
| *3350.00 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         | 6         |
| *3525.00 +XX              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 5         | 11        |
| *3700.00 +XXXX            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11        | 22        |
| *3875.00 +XXXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        | 38        |
| *4050.00 +XXXXXXXX        |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 25        | 63        |
| *4225.00 +XXXXXXXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 39        | 102       |
| *4400.00 +XXXXXXXXXXXX    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43        | 145       |
| *4575.00 +XXXXXXXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 39        | 184       |
| *4750.00 +XXXXXXXXXXXXXX  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 51        | 235       |
| *4925.00 +XXXXXXXXXXXXXXX |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 50        | 285       |
| *5100.00 +XXXXXXXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 28        | 313       |
| *5275.00 +XXXXXXXXXXXXX   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 29        | 342       |
| *5450.00 +XXXXXXXXXX      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 21        | 363       |
| *5625.00 +XXXXX           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 16        | 379       |
| *5800.00 +XXXX            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 11        | 390       |
| *5975.00 +XX              |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 7         | 397       |
| *6150.00 +X               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         | 400       |
| *LAST                     |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 0         | 400       |

run54

HISTOGRAM OF VARIABLE 3 tsvh

SYMBOL COUNT MEAN ST. DEV.  
X 488 5828.678 585.859  
EACH SYMBOL REPRESENTS 3 OBSERVATIONS

| INTERVAL | 15              | 38 | 45 | 68 | 75 | 98 | 185 | 128 | 135 | 158 | 165 | 188 | 195 | 218 | 225 | 248 | FREQUENCY |
|----------|-----------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| NAME     |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | INT. CUM. |
| *3175.88 | +               |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |
| *3358.88 | +X              |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
| *3525.88 | +               |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
| *3788.88 | +X              |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 3         |
| *3875.88 | +X              |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 6         |
| *4058.88 | +XXX            |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        |
| *4225.88 | +XXXXX          |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 9         |
| *4488.88 | +XXXXXX         |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 19        |
| *4575.88 | +XXXXXXXXXX     |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 34        |
| *4758.88 | +XXXXXXXXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 22        |
| *4925.88 | +XXXXXXXXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 56        |
| *5188.88 | +XXXXXXXXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 32        |
| *5275.88 | +XXXXXXXXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 49        |
| *5458.88 | +XXXXXXXXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 137       |
| *5625.88 | +XXXXXXXXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 38        |
| *5888.88 | +XXXXXXXXXXXXXX |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 175       |
| *5975.88 | +XXXXX          |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 52        |
| *6158.88 | +XXXXX          |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 227       |
| *6325.88 | +XXX            |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 43        |
| *6588.88 | +X              |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 278       |
| *6675.88 | +               |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 37        |
| *LAST    | +               |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 387       |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 31        |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 338       |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 23        |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 361       |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 14        |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 375       |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 12        |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 387       |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 18        |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 397       |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 2         |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 399       |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 1         |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 488       |
|          |                 |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 8         |

# Appendix E: Overlap Percentages for Variance Distributions

The percentages in the table represent the percent of the observations that were above the percentile for the 'low' distribution and the percent of the observations that were below the percentile for the 'high' distribution.

| LOW OBS |    |    |    |    |    |    |    |    |    | HI OBS |    |    |    |    |    |    |    |    |    |
|---------|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|
| RUN#    |    |    |    |    |    |    |    |    |    | RUN#   |    |    |    |    |    |    |    |    |    |
| RUN     | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | RUN    | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| %       |    |    |    |    |    |    |    |    |    | %      |    |    |    |    |    |    |    |    |    |
| 05      | 52 | 88 | 90 | 58 | 88 | 92 | 64 | 90 | 92 | 95     | 50 | 74 | 88 | 48 | 72 | 88 | 58 | 80 | 90 |
| 10      | 52 | 84 | 78 | 52 | 84 | 80 | 60 | 86 | 82 | 90     | 44 | 66 | 88 | 48 | 72 | 88 | 52 | 76 | 88 |
| 15      | 32 | 74 | 66 | 46 | 76 | 64 | 50 | 78 | 72 | 85     | 32 | 64 | 74 | 46 | 70 | 80 | 48 | 72 | 82 |
|         |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |    |    |
| RUN     | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | RUN    | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| %       |    |    |    |    |    |    |    |    |    | %      |    |    |    |    |    |    |    |    |    |
| 05      | 74 | 92 | 92 | 76 | 92 | 92 | 82 | 92 | 92 | 95     | 78 | 84 | 90 | 72 | 82 | 92 | 78 | 84 | 94 |
| 10      | 66 | 88 | 88 | 72 | 88 | 88 | 74 | 88 | 86 | 90     | 66 | 78 | 88 | 72 | 82 | 88 | 76 | 80 | 88 |
| 15      | 58 | 84 | 78 | 62 | 82 | 80 | 66 | 82 | 80 | 85     | 66 | 72 | 82 | 64 | 78 | 82 | 72 | 80 | 82 |
|         |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |    |    |
| RUN     | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | RUN    | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| %       |    |    |    |    |    |    |    |    |    | %      |    |    |    |    |    |    |    |    |    |
| 05      | 3  | 61 | 69 | 7  | 73 | 76 | 16 | 79 | 79 | 95     | 3  | 57 | 72 | 10 | 65 | 77 | 17 | 71 | 80 |
| 10      | 2  | 43 | 56 | 4  | 54 | 66 | 7  | 53 | 73 | 90     | 0  | 47 | 53 | 4  | 57 | 63 | 10 | 60 | 70 |
| 15      | 2  | 30 | 43 | 3  | 44 | 59 | 6  | 50 | 63 | 85     | 0  | 33 | 41 | 1  | 51 | 54 | 4  | 53 | 62 |

| LOW OBS |    |    |    |    |    |    |    |    |    | HI OBS |    |    |    |    |    |    |    |    |    |
|---------|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|
| RUN#    |    |    |    |    |    |    |    |    |    | RUN#   |    |    |    |    |    |    |    |    |    |
| RUN28   | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |    | RUN28  | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |    |
| %       |    |    |    |    |    |    |    |    |    | %      |    |    |    |    |    |    |    |    |    |
| 05      | 38 | 84 | 83 | 51 | 87 | 88 | 60 | 88 | 88 | 95     | 47 | 80 | 85 | 51 | 86 | 90 | 58 | 88 | 90 |
| 10      | 31 | 70 | 76 | 43 | 77 | 78 | 49 | 80 | 80 | 90     | 32 | 69 | 76 | 41 | 73 | 77 | 46 | 78 | 79 |
| 15      | 23 | 60 | 68 | 35 | 66 | 75 | 43 | 68 | 76 | 85     | 25 | 58 | 69 | 31 | 62 | 74 | 36 | 67 | 76 |
|         |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |    |    |
| RUN37   | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |    | RUN37  | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |    |
| %       |    |    |    |    |    |    |    |    |    | %      |    |    |    |    |    |    |    |    |    |
| 05      | 0  | 31 | 36 | 0  | 51 | 55 | 2  | 61 | 65 | 95     | 0  | 28 | 42 | 0  | 41 | 60 | 2  | 51 | 68 |
| 10      | 0  | 19 | 24 | 0  | 39 | 38 | 1  | 45 | 48 | 90     | 0  | 20 | 28 | 0  | 33 | 43 | 0  | 42 | 53 |
| 15      | 0  | 7  | 18 | 0  | 22 | 28 | 0  | 31 | 37 | 85     | 0  | 3  | 18 | 0  | 27 | 35 | 0  | 34 | 41 |
|         |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |    |    |
| RUN46   | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 |    | RUN46  | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 |    |
| %       |    |    |    |    |    |    |    |    |    | %      |    |    |    |    |    |    |    |    |    |
| 05      | 14 | 69 | 71 | 25 | 80 | 81 | 37 | 86 | 85 | 95     | 14 | 61 | 77 | 30 | 69 | 83 | 41 | 75 | 86 |
| 10      | 6  | 57 | 59 | 14 | 65 | 67 | 22 | 72 | 72 | 90     | 8  | 54 | 63 | 16 | 63 | 72 | 25 | 66 | 76 |
| 15      | 4  | 42 | 48 | 9  | 52 | 59 | 17 | 57 | 63 | 85     | 5  | 47 | 55 | 10 | 55 | 62 | 17 | 59 | 64 |

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22. Viewgraph from AFIT/LS Sys 227 Class, Jun 83.

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Abstract

→ This <sup>thesis</sup> ~~research~~ project developed a cost-risk assessment method that incorporated the effects of cost dependency between components in a system. The method uses program personnel's subjective assessments of component dependency as inputs. A simulation model was developed and employed to test the method under various levels of component dependence strength and direction, estimation error, and system size.

The analysis was accomplished by performing sensitivity analysis on the predictive capabilities of the cost-risk assessing method. Results indicate that the model has strong predictive capability when component size is small and when the direction of the component dependencies is mixed. It was also determined that the use of component dependency assessments produced more realistic total system cost variances than those produced under the assumption of component cost independence.

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