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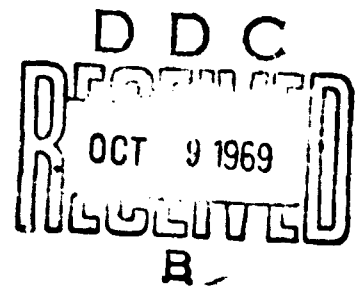
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**RADAR CROSS SECTION HANDBOOK
SUPPLEMENT**

PART I

**THEORETICAL TECHNIQUES FOR
DIFFRACTION BODIES (U)**



AUGUST 1969

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**RADAR CROSS SECTION HANDBOOK
SUPPLEMENT**

PART I

THEORETICAL TECHNIQUES FOR DIFFRACTION BODIES (U)

**G. T. Ruck
C. K. Krichbaum**

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FOREWORD

This document is the first of a five part supplement to RADAR CROSS SECTION HANDBOOK by G. T. Ruck, D. E. Barrick, W. D. Stuart, and C. K. Krichbaum, Plenum Press, New York, 1969. The supplement consists of classified material and unclassified material not available for open literature publication. The titles, authors, and classifications of the individual sections are, as follows:

I. "Theoretical Techniques for Diffraction Bodies (U)", G. T. Ruck and C. K. Krichbaum, Unclassified.

II. "Complex Body Cross Section (U)", G. T. Ruck and C. K. Krichbaum, Secret/Restricted Data.

III. "Cross Section Modification (U)", G. T. Ruck and D. E. Stutz, Secret.

IV. "Direct Observation of Reentry Plasma Effects (U)", W. D. Stuart, Secret/Formerly Restricted Data.

V. "Phenomena Associated with OTH Observations (U)", W. D. Stuart, Secret/Formerly Restricted Data.

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It should be noted that the views expressed herein are solely those of the authors and do not necessarily represent those of the Department of Defense.

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PART I

THEORETICAL TECHNIQUES FOR DIFFRACTION BODIES (U)

1.1 Handbook Objectives

This report is a supplement to a two-volume handbook designed to present the state-of-the-art in radar cross section determination, summarize the available analytical techniques for estimating radar cross sections, and present experimental data typical of the types of radar targets encountered. It is intended that this handbook can be used by persons who are not specialists in the radar field as well as by radar specialists. The two-volume handbook is the book, "Radar Cross Section Handbook", by Ruck, Barrick, Stuart, and Krichbaum, Plenum Press, New York, 1969, hereinafter referred to as "RCSH".

This report contains classified data, and unclassified data which is not generally available. Material contained in RCSH is not duplicated here, and full use is made of the discussions, figures, equations, etc., of RCSH throughout this report. It is assumed, therefore, that the reader has access to RCSH.

In general, the nomenclature, conventions, and symbols used in RCSH are retained here. There are some deviations, however, in a few instances where material from other sources is used, and these symbols are defined where used.

1.2 Radar Cross Section Analysis

Extensive discussions of the various techniques available for radar cross section estimation are contained in Chapter 8 and Chapter 2 of RCSH.

In general, most basic shapes can be placed into one of three classes, diffraction bodies, creeping wave bodies, or arbitrarily shaped bodies. Diffraction bodies are those for which the primary contributors to the high frequency cross section are a few specular points, edges, or traveling waves and no significant creeping wave contribution appears. Creeping wave bodies are those for which a significant creeping wave contribution exists along with a few specular point, edge, or traveling wave contributions. The distinction between these two classes of scatterers is important in that for diffraction bodies, techniques exist which will allow engineering cross section estimates to be made over virtually all aspect angles for frequencies well down into the resonance region. For creeping wave bodies no such techniques are available. In general, only for incidence at axial, broadside, and rear aspects on creeping wave bodies of revolution can reasonable high frequency or resonance region engineering estimates be made. For other aspects (near axial), numerical techniques such as discussed in Section 2.2.2.8 of RCSH must be used.

An arbitrary body is defined here to be one for which at most aspect angles there are a very large number of contributors to the high frequency cross section. Some examples of such bodies are aircraft and many satellites.

Rayleigh region estimates are available for virtually any shape, by the appropriate use of the Rayleigh results for the ellipsoid as discussed in Section 8.1.1.1.2 of RCSH. Unfortunately, however, very few targets lie in the Rayleigh region for most radar frequencies. Even for over-the-horizon radars operating in or near the HF band (3-40 Mcps), most targets are in the lower or middle resonance region.

Prior to discussing in more detail the techniques available for dealing with the various classes of bodies, it is of interest to present a summary of some of the simple expressions available for estimating the radar cross sections of simple shapes. These are presented in Table 1-1. All of these expressions can be found in RCSH, or derived from results presented there; however, they are scattered throughout the book.

In obtaining engineering estimates of the cross section of a particular shape over various aspect angles, the most generally useful approximation techniques are physical optics, geometrical diffraction, Fock theory, and Peters' traveling wave theory. For diffraction bodies, physical or geometrical optics plus that portion of geometrical diffraction dealing with edge diffracted rays will usually suffice. For creeping wave bodies, physical optics, and the theory of surface diffracted rays from geometrical diffraction, or Fock theory can be used, although the aspects treated often must be restricted. This will be discussed in more detail later.

As formulated by Keller, there are several deficiencies in the theory of geometrical diffraction. One of these is that the theory gives infinite results at a caustic or a specular point. A technique related to geometrical diffraction has been developed by Ufimtsev⁽¹⁾ in which the cross section can be made continuous at specular points and edges. In essence, Ufimtsev couples physical optics and what is referred to in RCSH as the Sommerfeld-MacDonald technique to provide field expressions which are continuous everywhere and which approach the optical fields as the aspect angle approaches a specular point. For aspects far from any specular point or edge, Ufimtsev's expressions asymptotically approach the geometrical diffraction results. Ufimtsev has applied this technique

TABLE 1-1. APPROXIMATE RADAR CROSS SECTIONS OF SOME SIMPLE SHAPES

Shape	Geometrical Parameters	Frequency Region	Aspect and Polarization	Radar Cross Section	Assumptions
Conducting sphere	Radius = a	$\lambda \gg a$ Rayleigh	All angles and polarizations	πa^2 $9\pi a^2$	Geometrical optics Rayleigh
Dielectric sphere	Radius = a Relative permeability = μ_r Relative permittivity = ϵ_r	$\lambda \gg a$ Rayleigh	All angles and polarizations	$\pi a^2 \left \frac{\epsilon_r \mu_r - 1}{\epsilon_r \mu_r + 1} \right ^2$ $4\pi a^2 \left \frac{\epsilon_r - 1}{\epsilon_r + 2} - \frac{\mu_r - 1}{\mu_r + 2} \right ^2$	Geometrical optics (lossy sphere, Lorenz-Mie boundary condition holds) Rayleigh (arbitrary sphere material)
Conducting doubly curved surface	a, b are radii of curvature at specular point	$\lambda \gg a, b$	All polarizations	$\pi a b$ $\pi a b \left \frac{\sqrt{\epsilon_r \mu_r} - 1}{\sqrt{\epsilon_r \mu_r} + 1} \right ^2$	Geometrical optics Geometrical optics (Lorenz-Mie boundary condition)
Dielectric doubly curved surface					
Conducting circular cylinder	Radius = a Length = l + measured from broadside	$\lambda \gg l$ Rayleigh ($0 < \theta < 90^\circ$)	All polarizations Near broadside ($0 < \theta < 45^\circ$) For ($45^\circ < \theta < 90^\circ$) All polarizations All angles	$\sigma(\theta) = ka^2 \cos^2 \theta \left[\frac{\sin(Qa \sin \theta)}{Qa \sin \theta} \right]^2$ $\sigma(0) = ka^2$ Use circular disc results. $\sigma_0(\theta) = \frac{\pi}{8} ka^2 \frac{\sqrt{\epsilon_r \mu_r} - 1}{\sqrt{\epsilon_r \mu_r} + 1}$ $\sigma_0(0) = 0$	Physical optics Rayleigh

TABLE 1-1. (Continued)

Shape	Dimensional Parameters	Frequency Region	Aspect and Polarization	Radar Cross Section	Approximation
Conducting elliptic cylinder	Major axis = $2a$ Minor axis = $2b$ Length = l a measured from cylinder axis b measured from major axis of ellipse	HF Rayleigh ($ka \ll 1, kb \ll 1$)	For $0 \leq \theta \leq 90^\circ$ and all ϕ For $45 \leq \theta \leq 90^\circ$ and all ϕ All polarizations All aspects	$\sigma(\theta, \phi) \sim \frac{16\pi^2 l^2 \sin^2 \theta}{(k^2 \cos^2 \theta + k^2 \sin^2 \theta)^{3/2}} \frac{\ln(0.1 \sin \theta)^2}{\ln \frac{1}{k} \sin \theta}$ Use elliptic plate results $\sigma(\theta) \sim \frac{16\pi^2 l^2 \sin^2 \theta}{\ln \frac{1}{k} \sin \theta} \frac{\cos^2 \theta}{1 + \cos^2 \theta}$ $\sigma_r(\theta) \approx 0$	Physical optics Rayleigh
Perfectly conducting prolate spheroid	Major axis = $2a$ Minor axis = $2b$ a is measured from major axis	HF Resonance Rayleigh	All polarizations All angles Axial incidence All polarizations All polarization All aspects	$\sigma(\theta) = \frac{16\pi^2 a^2 b^2}{l^2 \cos^2 \theta + b^2 \sin^2 \theta}$ $\sigma(\theta) \sim \ln \frac{1}{k} \cos^2 \theta [ka(1 + \epsilon(c))]$ $h = \frac{\pi}{2}, c = \sqrt{1 - b^2/a^2}$ $\epsilon =$ elliptic integral of the first kind $\sigma_r(\theta) = \frac{16\pi^2}{k^2} \ln \left[\frac{1}{1 + \frac{1}{k}} + \frac{\cos^2 \theta}{1 + \frac{1}{k}} + \frac{4\ln^2 \frac{1}{k}}{1 + \frac{1}{k}} \right]$ $\sigma_r(\theta) = \frac{16\pi^2}{k^2} \ln \left[\frac{1}{1 + \frac{1}{k}} + \frac{\cos^2 \theta}{1 + \frac{1}{k}} + \frac{4\ln^2 \frac{1}{k}}{1 + \frac{1}{k}} \right]$ ($1/k, 1/b$ are defined in Section 5.1.2.1 and Figures 5-2 and 5-3 of Radar Cross Section Handbook.)	Geometrical optics Rayleigh
Perfectly conducting oblate spheroid	Major axis = $2a$ Minor axis = $2b$ b is measured from minor axis	HF Rayleigh	All polarizations All aspects All polarizations All aspects	$\sigma(\theta) = \frac{16\pi^2 a^2 b^2}{l^2 \sin^2 \theta + a^2 \cos^2 \theta}$ $\sigma_r(\theta) = \frac{16\pi^2}{k^2} \ln \left[\frac{1}{1 + \frac{1}{k}} + \frac{\sin^2 \theta}{1 + \frac{1}{k}} + \frac{\cos^2 \theta}{1 + \frac{1}{k}} \right]$	Geometrical optics Rayleigh

TABLE 1-1. (Continued)

Shape	Dimensional Parameters	Frequency Region	Aspect and Polarization	Radar Cross Section	Approximation
Perfectly conducting oblate spheroid (Continued)		Rayleigh		$\sigma_{\text{R}}(\theta) = \frac{16\pi}{9} k^4 \left[\cos^2 \theta + \frac{\sin^2 \theta}{1 + \frac{1}{c}} + \frac{1}{1 + \frac{1}{c}} \right]$ ($1/a, 1/b$ are defined in Section 5.1.2.1 and Figures 5-2 and 5-4 of Radar Cross Section Handbook.)	Rayleigh
Perfectly conducting flat plates	General convex flat plate θ is measured from the normal to the plate A = plate area	HF	All aspects All polarizations	$\sigma(\theta) = \frac{4\pi}{\lambda^2} A^2 \cos^2 \theta \left[\frac{2h(x)}{x} \right]^2$ $x = k \sin \theta$ times the maximum linear dimensions of the plate in the plane of incidence $J_1(x)$ = Bessel function of the first order.	Physical optics
	a, b are equivalent length to width ratios for the plate ($a \geq b$)	Rayleigh	All aspects All polarizations	$\sigma_{\text{R}}(\theta, \phi) = \frac{16}{9\pi^2} k^4 A^2 \left[\frac{\sin^2 \theta}{1 + \frac{1}{a}} + \frac{\cos^2 \theta}{1 + \frac{1}{b}} + \frac{\sin^2 \theta}{1 + \frac{1}{b}} \right]$ $\sigma_{\text{R}}(\theta, \phi) = \frac{16}{9\pi^2} k^4 A^2 \left[\frac{\cos^2 \theta \cos^2 \phi}{1 + \frac{1}{a}} + \frac{\cos^2 \theta \sin^2 \phi}{1 + \frac{1}{b}} \right]$ $I_a' = 2(b/a)^{3/2} \left[\frac{K(\epsilon)}{E(\epsilon)} - \frac{E(\epsilon)}{K(\epsilon)} \right]$ $I_b' = 2(a/b)^{1/2} \left[\frac{E(\epsilon)}{K(\epsilon)} - \frac{E'(\epsilon)}{K'(\epsilon)} \right]$ $c = \sqrt{1 - b^2/a^2}$ E, K are complete elliptic integrals of the first and second kinds, respectively.	Rayleigh (approximation)
Conducting elliptic plate	a = semi-major axis b = semi-minor axis θ is measured from the normal to the plate ϕ is measured from the major axis	HF Rayleigh	All aspects All polarizations All aspects All polarizations	$\sigma(\theta, \phi) = \frac{4\pi}{\lambda^2} (ab)^2 \cos^2 \theta \left\{ \frac{2h}{\lambda} \left[2k \sin^2 \theta \cos^2 \phi + \frac{b^2 \sin^2 \theta \sin^2 \phi}{a^2} \right]^{1/2} \right\}^2$ $2k \left(\sin^2 \theta \cos^2 \phi + \frac{b^2 \sin^2 \theta \sin^2 \phi}{a^2} \right)^{1/2}$ $\sigma(\theta, \phi)$ is given by the results for a general convex flat plate with a, b the semi-major and semi-minor axis, and $A = \pi ab$.	Physical optics Rayleigh approximation

TABLE 1-1. (Continued)

Shape	Geometrical Parameters	Frequency Region	Aspects and Polarization	Radar Cross Section	Approximation
Conducting circular plate	a = radius θ is measured from the axis	HF	All polarizations $0 \leq \theta \leq 45^\circ$ $\theta \neq 0, \pi/2$ $\theta = \pi/2$	$\sigma(\theta) = \frac{4\pi a^2}{3} \cos^4 \left[\frac{2ka \sin \theta}{2ka \sin \theta} \right]^2$ $\sigma(\theta) = \frac{4\pi a^2}{3} \cos^2 (2ka \sin \theta + \frac{\sin^2 (2ka \sin \theta)}{\sin^2 \theta})$ $\sigma_\perp(\pi/2) = 0$ $\sigma_\parallel(\pi/2) \approx$	Physical optics Geometrical diffraction (single diffraction)
		Rayleigh	All aspects and all polarizations	$\sigma_\perp(\theta) = \frac{16}{9\pi} k^2 a^2 (2 + \sin^2 \theta)^2$ $\sigma_\parallel(\theta) = \frac{32}{9\pi} k^2 a^2 \cos^4 \theta$	Rayleigh
Conducting rectangular plate	a, b = lengths of sides θ is measured from the normal to the plate ϕ is measured from side a	HF	All polarizations $0 \leq \theta \leq 45^\circ$ Grazing on side a	$\sigma(\theta, \phi) = \frac{4\pi(a^2)}{3} \cos^2 \left[\frac{\sin(ka \sin \theta \cos \phi)}{ka \sin \theta \cos \phi} \right]^2 \frac{\sin(kb \sin \theta \sin \phi)}{kb \sin \theta \sin \phi}$ $\sigma_\perp(\pi/2) = 0$ $\sigma_\parallel(\pi/2) = \frac{4\pi}{3} a^2 \left[1 + \frac{\pi}{2} \left(\frac{b}{a} \right)^2 + \left(1 - \frac{\pi}{2} \left(\frac{b}{a} \right)^2 \right) \cos \left(2ka - \frac{2\pi}{5} \right) \right]$	Physical optics Empirical
Conducting annular ring	a_0 = outside radius a_1 = inside radius θ is measured from the symmetry axis	HF	All aspects All polarizations	$\sigma(\theta) = \frac{4\pi}{3} \cos^2 \theta (a_0^2)^2 \left[A_1(a_0) - \frac{2a_1^2}{a_0^2} A_1(a_1) \right]^2$ $A_1 = 2ka_1 \sin \theta$ $A_2 = 2ka_0 \sin \theta$ $A_3 = \frac{2ka_1(a_2)}{a_0}$	Physical optics
Conducting circular cone	z = cone half-angle a = base radius θ is measured from the symmetry axis ϕ = cone height	HF	None-on All polarizations Specular from the conical side	$\sigma(\theta) \approx 4\pi a^2 \left(\frac{\sin \pi/z}{\pi} \right)^2 \left[\cos \pi/n - \cos \frac{2\pi}{n} \right]$ $n = 3/2 + \alpha/\pi$ $\sigma(\pi/2 - \alpha) = \frac{4}{9} ka^2 \sec \alpha$	Geometrical diffraction Physical optics

TABLE 1-1. (Continued)

Shape	Dimensional Parameters	Frequency Region	Aspect and Polarization	Radar Cross Section	Approximation
Conducting Ogive	a = nose half-angle a = maximum radius	All frequencies	Nose-on All polarizations	$\sigma(\theta) = \frac{\lambda^2 \tan^2 \alpha}{16\pi} \left[(1 - e^{i4ka}) - \frac{3}{2ka} (1 - e^{i4ka}) - \frac{3}{4(ka)^2} (1 - e^{i4ka}) \right]^2$	Adachi
Conducting dipole	$\hat{r}$ is measured from broadside $\hat{\theta}$ is polarization angle measured from dipole axis	Half-wave	Bistatic All aspects All polarizations	$\sigma = .86\lambda^2 \cos^2 \gamma_i \cos^2 \gamma_s \left[\frac{\cos(\pi/2 \sin \theta_i)}{\cos \theta_i} \right]^2 \left[\frac{\cos(\pi/2 \sin \theta_s)}{\cos \theta_s} \right]^2$	Assumed sinusoidal current distribution, end effects neglected
		Full-wave		$\sigma = .93\lambda^2 \cos^2 \gamma_i \cos^2 \gamma_s \left[\frac{\sin(\pi \sin \theta_i)}{\cos \theta_i} \right]^2 \left[\frac{\sin(\pi \sin \theta_s)}{\cos \theta_s} \right]^2$	
Conducting circular loop	a = loop radius b = wire radius	Rayleigh	All aspects All polarizations	$\sigma_R(\theta) = \pi^2 a^2 (ka)^4 \cos^2 \theta [\ln(8a/b) - 2]^{-2}$ $\sigma_L(\theta) = \frac{\pi^2}{4} a^2 (ka)^4 (2 + \sin^2 \theta) [\ln(8a/b) - 2]^{-2}$ $\sigma(\theta) = Q [3_0 (2ka \sin \theta) - J_2 (2ka \sin \theta)]^2$	Rayleigh
		HF		$Q = \pi a^2 \left\{ \frac{(\pi/2)^2}{(\pi/2)^2} + \frac{4n \left(\frac{32}{\sqrt{\pi}} \right)^2}{[\ln(2/\sqrt{\pi})]^2} \right\}$ $\gamma = 1.78$	Physical optics plus empirical

to a finite cylinder, an infinite strip, and a disc with excellent results (see Sections 4.3.3.1, 7.4.2.2, and 7.5.1.2.3 of RCSH).

Ufimtsev's technique has been extended⁽²⁾ to provide a general method of dealing with diffraction bodies of revolution, a class into which many reentry vehicles and missiles fit. As a result of this extension a "cookbook" procedure exists for writing out the scattered field equations for perfectly conducting shapes of this type.* The rules for writing the scattered field expressions for diffraction bodies of revolution will be presented in the following section and some comparisons of experimental cross sections with cross sections calculated using the following procedure are given in Section 2.1.

1.2.1 Scattered Field Computation for Diffraction Bodies of Revolution

The total high frequency scattered fields from a body of revolution consisting of a convex nose segment followed by a profile formed of straight line segments, can be determined using an extension of Ufimtsev's technique developed by Ruck, at Battelle⁽²⁾.

In essence the total scattered fields are considered to be the sum of two components, one due to the geometrical optics currents flowing on the body, and the other due to edge currents flowing along surface discontinuities.

To illustrate the approach, and develop a set of "rules" for applying the technique, the first order scattered fields from a frustrum will be obtained. Consider a conical frustrum as shown in Figure 1-1:

* It should be noted that this procedure provides estimates for the total phase of the scattered field as well as the amplitude.

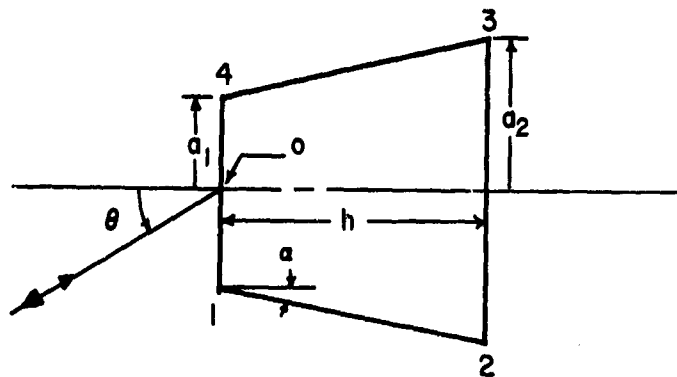


FIGURE 1-1. FRUSTRUM DIMENSIONS

The first step is to choose a phase reference point (point 0 above), and to determine which edges and surfaces are in view over the range of aspect angles for which results are desired. For example, in the range $\alpha \leq \theta \leq \pi/2$, Points 1, 2, and 4 are in view along with the surfaces 4 - 1 and 1 - 2. The far field contributions from the edge currents (the diffraction contributions) can then be written as follows:*

$$\begin{aligned} \frac{E}{H} = & (1/2) \{ a_1 f(4) [J_1(2ka_1 \sin \theta) + iJ_2(2ka_1 \sin \theta)] - a_1 f(1) [J_1(2ka_1 \sin \theta) - \\ & - J_2(2ka_1 \sin \theta)] - a_2 f(2) e^{2ikh \cos \theta} [J_1(2ka_2 \sin \theta) - iJ_2(2ka_2 \sin \theta)] \}. \end{aligned} \quad (1.2-1)$$

The functions $f(4)$, $f(1)$, $f(2)$, the diffraction coefficients for the respective points, are closely related to the diffraction coefficients of Keller (see Section 2.2.2.2 of RCSH), and will be given shortly.

* In this and the following equations of this section, the factor $e^{i(kr - \omega t)}/r$ has been suppressed.

Examining Equation 1.2-1, the rule for writing down the diffracted field component is readily apparent. In essence it amounts to writing $1/2$ times the sum of three terms which have the following form: each term consists of the diffraction coefficient $f(i)$, times the radius of curvature at the diffraction point, a_i , times the quantity $\pm [J_1(2ka_i \sin\theta) \pm iJ_2(2ka_i \sin\theta)]$, times a phase factor $e^{i\psi_i}$. The proper $\pm$ sign and phase angle ψ_i are determined as follows: cutting the body with a plane through the symmetry axis which is perpendicular to the plane of incidence; if the diffraction point lies on the incident field side of this plane, then the minus sign is used. If the diffraction point lies behind this plane, the plus sign is used. For a phase reference point on the symmetry axis, the phase factor ψ_i is the phase of the perpendicular projection of the diffraction point along the symmetry axis with respect to the phase reference point, and is positive if this is behind the phase reference point and negative if in front. For example, consider two diffraction points as illustrated in Figure 1-2.

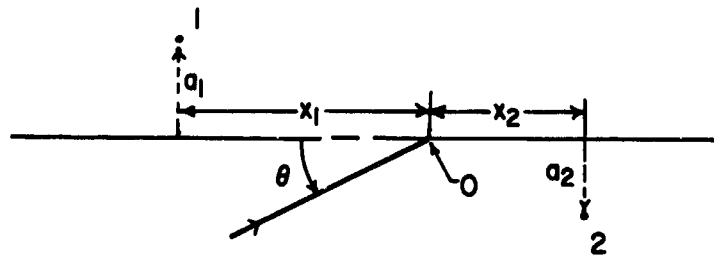


FIGURE 1-2. DIFFRACTION POINTS ON OPPOSITE SIDES OF THE SYMMETRY AXIS

With Point O the phase reference point, then $\psi_1 = -2kx_1 \cos\theta$, and $\psi_2 = +2kx_2 \cos\theta$.

Having specified the rules for writing the diffracted field components, the specific values of the diffraction coefficients $f(i)$ are

$$f(1) = \left[\frac{\sin(\pi/n)}{n} \left\{ \left(\cos(\pi/n) - 1 \right)^{-1} \mp \left(\cos(\pi/n) - \cos \frac{2\phi}{n} \right)^{-1} \right\} \mp \frac{\tan \phi}{2} \right], \quad (1.2-2)$$

or

$$f(1) = \left[\frac{\sin(\pi/n)}{n} \left\{ \left(\cos(\pi/n) - 1 \right)^{-1} \mp \left(\cos(\pi/n) - \cos \frac{2\phi}{n} \right)^{-1} \right\} \mp \frac{\tan \phi}{2} \mp \frac{\tan(\gamma - \phi)}{2} \right]. \quad (1.2-3)$$

Whether the first or second expression is used depends respectively upon whether only one, or both, faces of the equivalent wedge formed by the edge is illuminated. The angles in the above expressions are defined by Figure 1-3, with γ the exterior wedge angle, and $n = \gamma/\pi$.

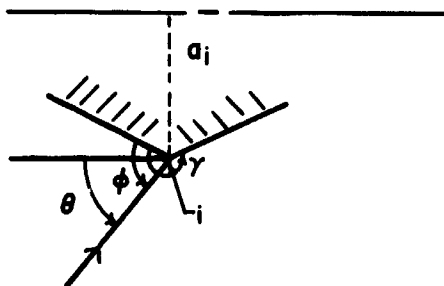


FIGURE 1-3. WEDGE ANGLE DEFINITION

Having defined the diffraction coefficients we can now write the explicit expressions for $f(4)$, $f(1)$, $f(2)$ for the frustrum. Thus

$$f(4) = \left[\frac{\sin(\pi/n_4)}{n_4} \left\{ \left(\cos(\pi/n_4) - 1 \right)^{-1} \mp \left(\cos(\pi/n_4) - \cos \frac{2(\pi/2 - \theta)}{n_4} \right)^{-1} \right\} \mp \frac{\tan(\pi/2 - \theta)}{2} \right], \quad (1.2-4)$$

$$f(1) = \left[\frac{\sin(\pi/n_1)}{n_1} \left\{ \left(\cos(\pi/n_1) - 1 \right)^{-1} \mp \left(\cos(\pi/n_1) - \cos \frac{2(\pi/2 + \theta)}{n_1} \right)^{-1} \right\} \mp \frac{\tan(\pi/2 + \theta)}{2} \mp \frac{\tan(\pi - \alpha - \theta)}{2} \right], \quad (1.2-5)$$

$$f(2) = \left[\frac{\sin(\pi/n_2)}{n_2} \left\{ \left(\cos(\pi/n_2) - 1 \right)^{-1} \mp \left(\cos(\pi/n_2) - \cos \frac{2(\alpha + \theta)}{n_2} \right)^{-1} \right\} \mp \frac{\tan(\alpha + \theta)}{2} \right], \quad (1.2-6)$$

with $n_1 = 3/2 - \alpha/\pi = n_2$, $n_2 = 3/2 + \alpha/\pi$.

It remains to determine the contribution to the scattered fields from the optical currents flowing on the surface. Consider the body of revolution to be cut along the plane of incidence and let us examine the specular contribution from a surface whose tangent in the plane of incidence makes an angle of α with the symmetry axis. This situation is illustrated in Figure 1-4.

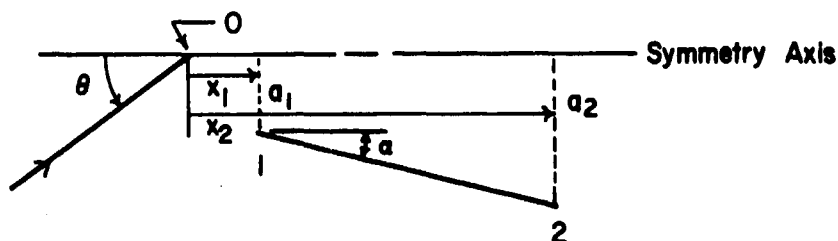


FIGURE 1-4. SURFACE WITH SLOPE α

The specular contribution from this surface can be written as the sum of contributions from Point 1 and Point 2, as follows:

$$\frac{E}{H} = \pm \frac{1}{4} \tan(\alpha + \theta) [G(1) - G(2)]. \quad (1.2-7)$$

The functions $G(i)$ consist of amplitude and phase terms, or

$$G(i) = a_i [J_1(2ka_i \sin \theta) - iJ_2(2ka_i \sin \theta)] [1 - F(\tau_i)] e^{i\Psi_i}, \quad (1.2-8)$$

where

$$F(\tau_i) = \frac{e^{-i\tau_i^2}}{2\tau_i} \sqrt{\frac{\pi}{2}} [C_2(\tau_i^2) + iS_2(\tau_i^2)] = \frac{e^{-i\tau_i^2}}{\tau_i} \int_0^{\tau_i} e^{it^2} dt, \quad (1.2-9)$$

$$\tau_i = \sqrt{2ka_i \csc \alpha \cos(\alpha + \theta)}, \quad (1.2-10)$$

and Ψ_i is the same as previously defined ($\Psi_i = 2kx_i \cos \theta$ with 0 the phase reference point and x_i being positive as illustrated). The plus or minus sign on G is determined by assigning a plus sign to the point nearest the source (i.e., Point 1 in this case), and a minus sign to the farthest point. Thus the optics contribution from the surface illustrated above is

$$\begin{aligned} \frac{E}{H} = & \pm \frac{1}{4} \tan(\alpha + \theta) \left\{ e^{i2kx_1 \cos \theta} a_1 [1 - F(\tau_1)] [J_1(2ka_1 \sin \theta) - iJ_2(2ka_1 \sin \theta)] - \right. \\ & \left. - e^{i2kx_2 \cos \theta} a_2 [1 - F(\tau_2)] [J_1(2ka_2 \sin \theta) - iJ_2(2ka_2 \sin \theta)] \right\}, \end{aligned} \quad (1.2-11)$$

with

$$\tau_1 = \sqrt{2ka_1 \csc \alpha \cos(\alpha + \theta)}, \quad (1.2-12)$$

$$\tau_2 = \sqrt{2ka_2 \csc \alpha \cos(\alpha + \theta)}. \quad (1.2-13)$$

Now as $\alpha \rightarrow 0$ then $a_1 \rightarrow a_2 \rightarrow a$ and $\tau_1, \tau_2 \rightarrow \infty$. Examination of $F(\tau)$ reveals that $\lim_{\tau \rightarrow \infty} F(\tau) = 0$. Therefore the optical result for a cylindrical

section is

$$\frac{E}{H} = \pm (1/4) \tan \theta \left\{ \left[e^{i2kx_1 \cos \theta} - e^{i2kx_2 \cos \theta} \right] \left[J_1(2ka \sin \theta) - iJ_2(2ka \sin \theta) \right] \right\}. \quad (1.2-14)$$

If the surface has an inverse slope such as shown in Figure 1-5, then the above result is correct if α is replaced by $-\alpha$.

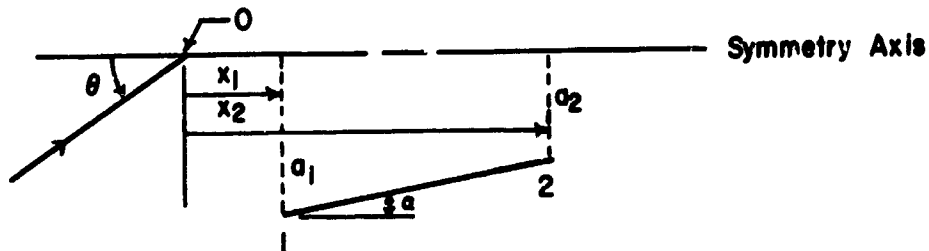


FIGURE 1-5. SURFACE WITH INVERSE SLOPE

Thus for the configuration of Figure 1-5,

$$\frac{E}{H} = \pm (1/4) \tan(\theta - \alpha) [G(1) - G(2)], \quad (1.2-15)$$

where

$$G(i) = a_i [J_1(2ka_i \sin \theta) - iJ_2(2ka_i \sin \theta)] [1 - F(\tau_i)] e^{iV_i}, \quad (1.2-16)$$

and

$$\tau_i = \sqrt{-2ka_i \csc \alpha \cos(\theta - \alpha)}. \quad (1.2-17)$$

If a surface lying on the opposite side of the symmetry axis is illuminated at angle θ , as illustrated in Figure 1-6, the correct results are obtained if the substitution $\theta \rightarrow -\theta$ is made in Equation 1.2-7.

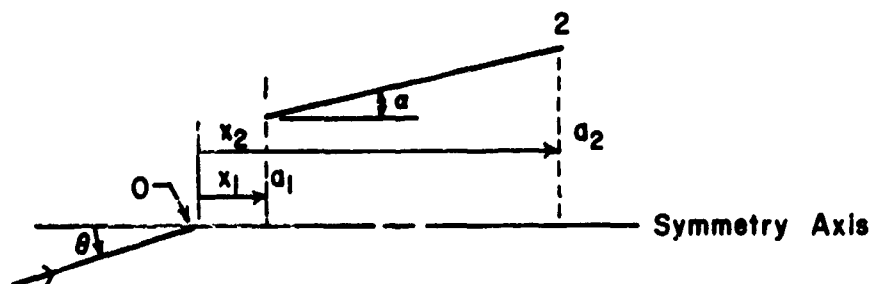


FIGURE 1-6. SURFACE LYING ACROSS THE SYMMETRY AXIS FROM THE INCIDENT FIELD DIRECTION

Thus for the surface of Figure 1-6, the optical contribution is

$$\frac{E}{H} = \pm (1/4) \tan(\alpha - \theta) [G(2) - G(1)] , \quad (1.2-18)$$

where

$$G(1) = a_1 [J_1(2ka_1 \sin \theta) + iJ_2(2ka_1 \sin \theta)] [1 - F(\tau_1)] e^{iY_1} , \quad (1.2-19)$$

$$\tau_1 = \sqrt{2ka_1 \csc \alpha \cos(\alpha - \theta)} , \quad (1.2-20)$$

and Y_1 is the same as previously defined. Notice that there are several differences in the form of Equations 1.2-18, -19 as compared to Equations 1.2-7, -8. The first being that now $G(1)$ carries the minus sign, while $G(2)$ is positive. In addition, the combination $J_1 + iJ_2$ is used rather than $J_1 - iJ_2$.

For a disc as illustrated in Figure 1-7, the specular contribution can be written as

$$\frac{E}{H} = \pm \frac{1a}{2} |\cot \theta| J_1(2ka \sin \theta) . \quad (1.2-21)$$

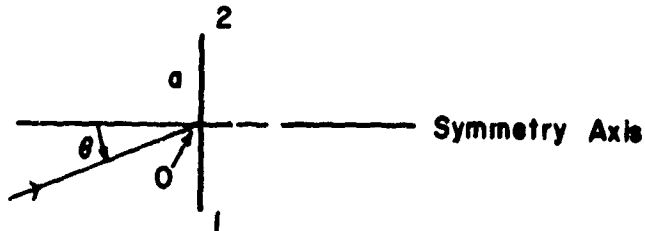


FIGURE 1-7. DISC PARAMETERS

This can be considered to be the sum of two terms similar to those previously obtained, or

$$\frac{E}{H} = \pm \frac{ia}{4} [S(1) + S(2)] . \quad (1.2-22)$$

Now

$$S(1) = [J_1(2k \sin \theta) - iJ_2(2k \sin \theta)] \cot \theta , \quad (1.2-23)$$

and in accordance with our previous rule, $S(2) = S(1)$ with $\theta \rightarrow -\theta$, or

$$S(2) = -\cot \theta [-J_1(2k \sin \theta) - iJ_2(2k \sin \theta)] ,$$

$$S(2) = \cot \theta [J_1 + iJ_2] . \quad (1.2-24)$$

Adding $S(1)$ and $S(2)$ then gives*

$$S(1) + S(2) = 2 \cot \theta J_1(2k \sin \theta) . \quad (1.2-25)$$

* Notice that the disc result, Eq. (1.2-21), can be obtained from Eq. (1.2-7) if a is set equal to $\pi/2$ and a_1 is moved across the symmetry axis.

Now utilizing the previous results, the scattered fields for a frustrum will be written. The diffraction contribution for $\alpha \leq \theta \leq \pi/2$ is given by Equation 1.2-1 using the diffraction coefficients of Equations 1.2-4, 5, 6. To this we add the specular contribution from the conical side 1 - 2 given by Equation 1.2-11 with $x_1 = 0$ and $x_2 = h$, and the specular contribution from the disc face 1 - 4 given by Equation 1.2-21. The resultant field expressions are

$$\begin{aligned}
 \frac{E}{H} = & \frac{1}{2} \left\{ a_1 [J_1(2ka_1 \sin \theta) + iJ_2(2ka_1 \sin \theta)] \left[\frac{\sin(\pi/n^-)}{n^-} \right] \left[(\cos(\pi/n^-) - 1)^{-1} \mp \right. \right. \\
 & \mp \left. \left(\cos(\pi/n^-) - \cos \frac{2(\pi/2 - \theta)}{n^-} \right)^{-1} \right] - a_1 [J_1(2ka_1 \sin \theta) - \\
 & - iJ_2(2ka_1 \sin \theta)] \left[\frac{\sin(\pi/n^-)}{n^-} \right] \left\{ (\cos(\pi/n^-) - 1)^{-1} \mp \right. \\
 & \mp \left. \left(\cos(\pi/n^-) - \cos \frac{2(\pi/2 + \theta)}{n^-} \right)^{-1} \right\} \mp \\
 & \mp \frac{\tan(\alpha + \theta)}{2} F\left(\sqrt{2ka_1 \csc \alpha \cos(\alpha + \theta)}\right) \left. \right] - a_2 [J_1(2ka_2 \sin \theta) - \\
 & - iJ_2(2ka_2 \sin \theta)] \left[\frac{\sin(\pi/n^+)}{n^+} \right] \left\{ (\cos(\pi/n^+) - 1)^{-1} \mp \right. \\
 & \mp \left. \left(\cos(\pi/n^+) - \cos \frac{2(\alpha + \theta)}{n^+} \right)^{-1} \right\} \mp \\
 & \mp \frac{\tan(\alpha + \theta)}{2} F\left(\sqrt{2ka_2 \csc \alpha \cos(\alpha + \theta)}\right) \left. \right] e^{2ikh \cos \theta} \Big\} , \tag{1.2-26}
 \end{aligned}$$

with

$$n^- = 3/2 - \alpha/\pi, \quad n^+ = 3/2 + \alpha/\pi. \tag{1.2-27}$$

The results as presented so far do not provide the correct solution for a diffraction caustic. This would not be significant for the frustrum since at $\theta = 0, \pi$ (the only caustic points) the specular terms from the disc faces are maximum and much larger than the contribution from the diffraction caustic. The results can be easily modified, however, so as to give the correct caustic expressions, and, in general, this should be done. In essence it consists of taking the final expression, such as Equation 1.2-26, and everywhere replacing J_2 by $-J_0$ without changing the argument. In addition a term given by

$$\frac{E}{H} = \frac{-a_1}{2n_1} [J_0(2ka_1 \sin \theta) + J_2(2ka_1 \sin \theta)] \frac{\sin(\pi/n_1)}{\cos(\pi/n_1) - 1} e^{i\psi_1}, \quad (1.2-28)$$

should be added for every diffraction point. Thus for the frustrum, three terms of this type should be added for the range $\alpha \leq \theta \leq \pi/2$. The corrected expression then would be,

$$\begin{aligned} \frac{E}{H} = & (1/2) \left\{ a_1 [J_1(2ka_1 \sin \theta) - iJ_0(2ka_1 \sin \theta)] \left[\frac{\sin(\pi/n^-)}{n^-} \right] \left[(\cos(\pi/n^-) - 1)^{-1} \mp \right. \right. \\ & \left. \left. \mp \left(\cos(\pi/n^-) - \cos \frac{2(\pi/2 - \theta)}{n^-} \right)^{-1} \right] + \frac{ia_1}{n^-} \left[\frac{\sin(\pi/n^-)}{\cos(\pi/n^-) - 1} \right] [J_0(2ka_1 \sin \theta) + \right. \\ & \left. + J_2(2ka_1 \sin \theta)] - a_1 [J_1(2ka_1 \sin \theta) + iJ_0(2ka_1 \sin \theta)] \right. \\ & \left. \left[\frac{\sin(\pi/n^-)}{n^-} \right] \left\{ (\cos(\pi/n^-) - 1)^{-1} \mp \left(\cos(\pi/n^-) - \cos \frac{2(\pi/2 + \theta)}{n^-} \right)^{-1} \right\} \pm \right. \\ & \left. \pm \frac{\tan(\alpha + \theta)}{2} F \left(\sqrt{2ka_1 \csc \alpha \cos(\alpha + \theta)} \right) \right] + \frac{ia_1}{n^-} \left[\frac{\sin(\pi/n^-)}{\cos(\pi/n^-) - 1} \right] [J_0(2ka_1 \sin \theta) + \\ & \left. + J_2(2ka_1 \sin \theta)] - a_2 [J_1(2ka_2 \sin \theta) + iJ_0(2ka_2 \sin \theta)] \right\} \end{aligned}$$

$$\begin{aligned}
& \left[\frac{\sin(\pi/n^+)}{n^+} \left\{ \left(\cos(\pi/n^+) - 1 \right)^{-1} \mp \left(\cos(\pi/n^+) - \cos \frac{2(\alpha + \theta)}{n^+} \right)^{-1} \right\} \mp \right. \\
& \mp \frac{\tan(\alpha + \theta)}{2} F \left(\sqrt{2ka_2 \csc \alpha \cos(\alpha + \theta)} \right) \left. \right] e^{i2kh \cos \theta} + \frac{ia_2}{n^+} \left[\frac{\sin(\pi/n^+)}{\cos(\pi/n^+) - 1} \right] \\
& [J_0(2ka_2 \sin \theta) + J_2(2ka_2 \sin \theta)] e^{i2kh \cos \theta} \quad (1.2-29)
\end{aligned}$$

Equation 1.2-29 is an expression for the scattered fields from a frustrum which is continuous everywhere except at the points $\theta = \pm \alpha, \pm \pi/2, \pm (\pi - \alpha)$. That is, at any angle at which grazing incidence occurs along one of the frustrum sides or faces. At these points the diffraction coefficients $f(1)$ for parallel (horizontal) polarization are incorrect. For example, consider the face illustrated in Figure 1-8.

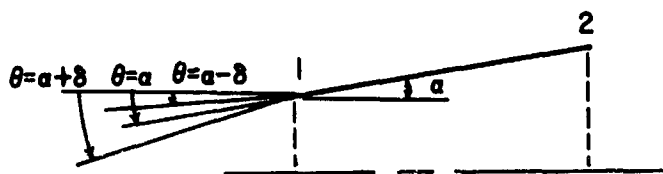


FIGURE 1-8. ANGLES NEAR GRAZING INCIDENCE

There are diffraction contributions from the edges at Points 1 and 2. When the angle of incidence is $\alpha - \delta$, then the diffraction contribution from Point 2 is $f(2)$. At $\theta = \alpha$ the contribution from Point 2 should be $\frac{1}{2} f(2)$, and for $\theta = \alpha + \delta$ the contribution from Point 2 should be zero. It is obvious that this contribution cannot change in a discontinuous fashion, thus it must smoothly vary from $f(2)$ for $\theta = \alpha - \delta$, to $.5 f(2)$ for $\theta = \alpha$, to zero for $\theta = \alpha + \delta$. An empirical method of achieving this smooth transition is to multiply the diffraction coefficient by a function $Q(z)$ which has the property that $\lim_{z \rightarrow \infty} Q(z) \rightarrow 1$, $Q(0) = \frac{1}{2}$, $\lim_{z \rightarrow -\infty} Q(z) \rightarrow 0$.

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the diffraction coefficient for Point 3, zero's of z_3 must occur at points $\theta = \alpha$ and $\theta = \pi/2$. Now constraining θ to lie in the region $0 \leq \theta \leq \pi$ then

$$z_3 = pka(\alpha - \theta)(\pi/2 - \theta), \quad 0 \leq \theta \leq \pi/2$$

$$z_3 = pka(\theta - \pi/2)\pi/2, \quad \pi/2 \leq \theta \leq \pi.$$

Similarly

$$z_2 = pka(\alpha + \theta)(\pi/2 + \theta), \quad 0 \leq \theta \leq \pi/2$$

$$z_2 = pka(3\pi/2 - \theta)\pi/2, \quad \pi/2 \leq \theta \leq \pi.$$

To simplify the computation, $Q(z)$ can be defined as

$$Q(z) \equiv 1 \text{ for } z > 2,$$

$$Q(z) = \frac{1+\text{erf}(z)}{2} \text{ for } -2 \leq z \leq 2,$$

$$Q(z) \equiv 0 \text{ for } z < -2. \quad (1.2-32)$$

The error involved will be negligible for engineering purposes since $Q(2) = .997$, and $Q(-2) = .003$.

The parameter p in the expression for z is arbitrary and controls the rate at which the transition occurs. A value of p of 1 or 2 appears to be reasonable.

Returning to the frustrum, then the diffraction coefficients $f(1)$, $f(2)$, $f(3)$, $f(4)$ are to be replaced in Equation 1.2-29 by

$$f'(1) = Q(z_1)f(1)$$

$$f'(2) = Q(z_2)f(2)$$

$$f'(3) = Q(z_3)f(3)$$

$$f'(4) = Q(z_4)f(4) \quad (1.2-33)$$

with

$$\left. \begin{aligned} z_1 &= 2ka(\pi - \alpha - \theta)(\pi/2 + \theta) \\ z_4 &= 2ka(\pi - \alpha + \theta)(\pi/2 - \theta) \end{aligned} \right\} 0 \leq \theta \leq \pi, \quad (1.2-34)$$

$$\left. \begin{aligned} z_3 &= 2ka(\pi/2 - \theta)(\alpha - \theta) \\ z_2 &= 2ka(\pi/2 + \theta)(\alpha + \theta) \end{aligned} \right\} 0 \leq \theta \leq \pi/2, \quad (1.2-35)$$

$$\left. \begin{aligned} z_3 &= 2ka(\theta - \pi/2) \\ z_2 &= 2ka(3\pi/2 - \theta) \end{aligned} \right\} \pi/2 \leq \theta \leq \pi. \quad (1.2-36)$$

It is of some interest to examine the physical content of the expressions obtained in the previous paragraphs. In order to do this, the results for a cone will be used and the Q functions will not be included in order to simplify the discussion. If we let $a_1 = 0$ and $a_2 = a$ in the expressions for the scattered fields from a frustrum, Equation 1.2-29, the scattered fields from a cone will be obtained. Thus for a cone

$$\begin{aligned}
\frac{E}{H} = & \frac{ia}{2} \left\{ e^{2ikh\cos\theta} \left\{ -[J_1 + iJ_0] \left[\frac{\sin(\pi/n)}{n} \left([\cos(\pi/n) - 1]^{-1} \mp \right. \right. \right. \\
& \mp \left. \left. \left[\cos(\pi/n) - \cos \frac{2(\alpha + \theta)}{n} \right]^{-1} \right) \mp \frac{\tan(\alpha + \theta)}{2} F(\tau^+) \right] + \right. \\
& + [J_1 - iJ_0] \left[\frac{\sin(\pi/n)}{n} \left([\cos(\pi/n) - 1]^{-1} \mp \right. \right. \\
& \mp \left. \left. \left[\cos(\pi/n) - \cos \frac{2(\alpha - \theta)}{n} \right]^{-1} \right) \mp \frac{\tan(\alpha - \theta)}{2} F(\tau^-) \right] \left. \right\} + \\
& + 2ie^{2ikh\cos\theta} \frac{\sin(\pi/n)}{n[\cos(\pi/n) - 1]} [J_0 + J_2] \left. \right\}, \quad (1.2-37)
\end{aligned}$$

if $0 \leq \theta \leq \pi/2$. If $\pi/2 \leq \theta \leq \pi$, then

$$\begin{aligned}
\frac{E}{H} = & \frac{ia}{2} \left\{ e^{2ikh\cos\theta} \left\{ [J_1 - iJ_0] \left[\frac{\sin(\pi/n)}{n} \right] \left[[\cos(\pi/n) - 1]^{-1} \mp \right. \right. \right. \\
& \mp \left. \left. \left[\cos(\pi/n) - \cos \frac{2(\theta - \pi/2)}{n} \right]^{-1} \right] - \right. \\
& - [J_1 + iJ_0] \left[\frac{\sin(\pi/n)}{n} \left([\cos(\pi/n) - 1]^{-1} \mp \right. \right. \\
& \mp \left. \left. \left[\cos(\pi/n) - \cos \frac{2(3\pi/2 - \theta)}{n} \right]^{-1} \right) \mp \frac{\tan(\alpha + \theta)}{2} F(\tau^+) \right] \left. \right\} + \\
& + ie^{2ikh\cos\theta} \frac{\sin(\pi/n)}{n[\cos(\pi/n) - 1]} [J_0 + J_2] \left. \right\}, \quad (1.2-38)
\end{aligned}$$

with

$$\tau^- = \sqrt{2kacsc\alpha} \cos(\alpha - \theta)$$

$$\tau^+ = \sqrt{2kacsc\alpha} \cos(\alpha + \theta) \quad (1.2-39)$$

and the Bessel function argument is $2k a \sin \theta$ in all of the above. Now examining these expressions, in Equation 1.2-37 the first set of terms (those multiplied by $[J_1 + iJ_0]$) represent the contribution to the scattered fields by the optical currents on the near side of the cone and the edge currents on the near edge. The second set of terms (those multiplied by $[J_1 - iJ_0]$) are non-zero only for $|\theta| < \alpha$ and give the contribution from the optical and edge currents from the far side and edge. The reason for this contribution going to zero for $\theta > \alpha$ is that the far side of the cone is shadowed at these aspects. Now, if we let $\theta \rightarrow 0$, then $J_1, J_2 \rightarrow 0, J_0 \rightarrow 1$ and the expression reduces to

$$\frac{E}{H} = (a/2) e^{i2kh \cos \theta} \left[\frac{\sin(\pi/n)}{n} \right] \left[\frac{\mp 2}{\cos(\pi/n) - \cos \frac{2\alpha}{n}} \mp \tan \alpha F(\tau^\circ) \right] \quad (1.2-40)$$

which is the single diffraction expression for the backscattered field on the axial caustic of a cone along with the term, $\tan \alpha F(\tau^\circ)$, which represents a residual contribution from the far specular sidelobes and can often be neglected.

Far from $\theta = 0$ or $\theta = \pi/2 - \alpha$, the term $[J_1 + iJ_0]$ can be expanded for large argument to give

$$[J_1 + iJ_0] \rightarrow i \sqrt{\frac{1}{\pi k a \sin \theta}} e^{-i(2k a \sin \theta - \pi/4)}, \quad (1.2-41)$$

and when substituted into the first term of Equation 1.2-37 yields

$$\frac{E}{H} = \frac{e^{i(\pi/4 - 2k a \sin \theta)}}{\sqrt{2\pi k}} \sqrt{\frac{a}{2 \sin \theta}} \left[\frac{\sin(\pi/n)}{n} \right] \left[\left(\cos(\pi/n) - 1 \right)^{-1} \mp \left(\cos(\pi/n) - \cos \frac{2(\alpha + \theta)}{n} \right)^{-1} \right] \quad (1.2-42)$$

which is the geometrical diffraction expression for a singly-diffracted ray from the near edge of the conical base.

Similarly if Equation 1.2-37 is examined for $\theta \approx \pi/2 - \alpha$, the infinities caused by $\left[\cos(\pi/n) - \cos \frac{2(\alpha + \theta)}{n}\right]^{-1}$ and $\frac{\tan(\alpha + \theta)}{2}$ cancel, leaving

$$\frac{E}{H} = \frac{-ia}{2} [J_1 + iJ_0] e^{2ikh\cos\theta} \left\{ \frac{\sin(\pi/n)}{n[\cos(\pi/n) - 1]} \pm i \frac{\tan(\alpha + \theta)}{2} (2/3) \right. \\ \left. [2kh\cos(\alpha + \theta)\sec\alpha] \right\}. \quad (1.2-43)$$

Expanding $J_1 + iJ_0$ for a large argument gives

$$\frac{E}{H} = \frac{-ia}{2} \left[i \sqrt{\frac{1}{\pi k \sin\theta}} e^{-i(2k \sin\theta - \pi/4)} \right] e^{2ikh\cos\theta} \left\{ \frac{\sin(\pi/n)}{n[\cos(\pi/n) - 1]} \right. \\ \left. \pm i(2/3)kh\sec\alpha \sin(\alpha + \theta) \right\}, \quad (1.2-44)$$

or

$$\frac{E}{H} = \frac{1}{2} \sqrt{\frac{a}{\pi k \sin\theta}} e^{i(2kh\cos\theta - 2k \sin\theta + \pi/4)} \left\{ \frac{\sin(\pi/n)}{n[\cos(\pi/n) - 1]} \right. \\ \left. \pm i(2/3)kh\sec\alpha \sin(\alpha + \theta) \right\}. \quad (1.2-45)$$

For $kh\sec\alpha$ large, this becomes

$$\frac{E}{H} \approx \pm i/3 \sqrt{\frac{ka}{\pi \sin\theta}} [h\sec\alpha \sin(\alpha + \theta)] e^{i(2kh\cos\theta - 2k \sin\theta + \pi/4)}, \quad (1.2-46)$$

the specular contribution from a cone side.

At $\theta \approx \pi$, Equation 1.2-38 can be expanded to give the physical optics result for scattering from a disc, as it should for this angle. In general, these expressions yield either the correct physical optics result or the geometrical diffraction result, depending upon the aspect angle. Between these limits the equations can be considered to be interpolation formulas which continuously join the physical optics and diffraction expressions.

Having obtained expressions for the scattered fields from a frustrum or a cone, it remains to examine the manner in which expressions are obtained for a body with a smooth convex nose section. Taking a sphere-cone as an example, we will assume that a spherical nose segment is smoothly joined to the conical frustrum of Figure 1-1. We assume that at most, only a second derivative discontinuity exists at the join. The join contribution in this case is a second order effect and can be neglected. If we desire to include second order terms, the join contribution would be included and can be computed by the technique discussed in Section 8.1.1.1.3 of RCSH.

Since we have assumed the sphere-cone join to be smooth, there is no edge at Points 1 and 4 of Figure 1-1 and the diffraction contributions from these points must be omitted. Similarly, since the disc surface 1-4 is no longer viewed, the physical optics contribution from this surface must be omitted. Thus the field expressions consist of the specular contribution from the spherical nose, the diffraction contribution from Points 2 and 3 and the specular contribution from the sides 1-2, 4-3, and the rear, 2-3. The resulting field equations for the sphere-cone are given as Equations 2.1-52, 2.1-53 of Section 2.1.2.1.1 of Chapter 2, Part II.

The field equations obtained using the technique of this section are analytically simple although somewhat complex algebraically. They can be easily programmed for machine evaluation or can be evaluated numerically using a desk calculator. The appendix of this report gives some computational aids for the use of either of these methods.

In Table A-1 of the appendix, tabulations of the function $F(\tau)$ are given versus τ^2 , for τ^2 ranging from -80 to 80 in steps of 0.25. Similarly, the diffraction coefficients are tabulated in Tables A-3 through A-14 for cone

half-angles of 0, 6°, 8°, 10°, 12°, and 15°. The aspect angle θ ranges from 0 to 180° in 0.5° increments in these tables.

1.2.2 Creeping Wave Body Computations

It was mentioned previously that for creeping wave bodies no analytical techniques are available for obtaining cross section estimates at all aspects. In particular, estimates are not available for those aspects where the creeping wave dominates, with the exception of the axial caustic for certain bodies of revolution. For those aspects where the creeping wave is not a dominant contributor the techniques of the previous section and those of Section 8.1.1.1.1 of RCSH can be used to obtain reasonable cross section estimates. Similarly, Rayleigh region estimates can be obtained for all aspects by the techniques of Section 8.1.1.1.2 of RCSH.

This leaves the question then of what can be done with respect to obtaining analytical estimates for those aspects where the creeping wave dominates. For a perfectly conducting, convex, body of revolution either Fock theory or the geometrical diffraction approach of Section 8.1.1.1.4 of RCSH can be used to obtain first order estimates. If any of the above three restrictions are relaxed, however, then very little can be done. For axial incidence on perfectly conducting bodies of revolution with a spheroidal shaped shadow region (i.e., cone-sphere, cone prolate spheroid, etc.), first order estimates can be obtained using either Fock theory or the geometrical theory of diffraction.⁽³⁾ Similarly, first order axial incidence cross section estimates are available for a coated cone-sphere under certain restrictions on the coating parameters.⁽⁴⁾

For off-axial incidence on the above bodies, no creeping wave estimates exist. Similarly, if the shadow region is not spheroidal no creeping wave

estimates exist even for axial incidence. Likewise for nonperfectly conducting bodies, particularly relatively lossless dielectric bodies or bodies with dielectric coatings, no creeping wave estimates exist.

In general, then, at the present time we are forced to rely primarily on experimental data for estimates of the creeping wave contribution for most bodies. For perfectly conducting bodies at not too high a frequency, however, the numerical methods discussed in Section 2.2.2.8 of RCSH can be used.

1.3 References

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APPENDIX
NUMERICAL METHODS

BATTELLE MEMORIAL INSTITUTE - COLUMBUS LABORATORIES

APPENDIX

NUMERICAL METHODS

A.1 Introduction

The high frequency solutions obtained using the methods presented in Section 1.2 require use of a digital computer or modern desk calculator for numerical evaluation. The following functions are required for computation of the high frequency solutions: (1) trigonometric functions, (2) elliptic integrals, (3) Bessel functions, (4) error function, and (5) Fresnel integrals. Numerical tables are available for all of these functions and are convenient for use with a desk calculator. If a digital computer is used, the use of tables is not a convenient method for evaluating functions; the following computing procedures are convenient for this purpose.

A.2 Elliptic Integrals

In the computation of Rayleigh cross sections of ellipsoids, the following functions were introduced in Section 5.1.1.1 of Volume I:

$$I_a = \frac{2}{abc} \frac{\cos \varphi \cos \alpha}{\sin^2 \varphi \sin^2 \alpha} \left[F(\varphi, \alpha) - E(\varphi, \alpha) \right] \quad (A-1)$$

$$I_b = \frac{2}{abc} \frac{\cos \varphi \cos \alpha}{\sin^2 \varphi \sin^2 \alpha} \left[E(\varphi, \alpha) - \cos^2 \alpha F(\varphi, \alpha) - \frac{\sin^2 \alpha \sin \varphi \cos \varphi}{\cos \alpha} \right] \quad (A-2)$$

$$I_c = \frac{2}{abc} \frac{\cos \varphi \cos \alpha}{\sin^2 \varphi \cos^2 \alpha} \left[\frac{\sin \varphi \cos \varphi}{\cos \alpha} - E(\varphi, \alpha) \right] \quad (A-3)$$

where F and E , the incomplete elliptic integrals of the first and second kinds respectively, are defined by

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$$F(\varphi, \alpha) = \int_0^\varphi \frac{d\theta}{\sqrt{1 - \sin^2 \alpha \sin^2 \theta}} \quad (\text{A-4})$$

$$E(\varphi, \alpha) = \int_0^\varphi \sqrt{1 - \sin^2 \alpha \sin^2 \theta} \, d\theta \quad (\text{A-5})$$

φ and α are termed the amplitude and modular angle respectively. Numerical tabulations of these functions are contained in References 1, 2, and 3.

If computations are carried out on a digital computer, the following algorithm, taken from References 1 and 2, provides a rapid evaluation of these functions and is valid for all points except at $(\varphi = 90^\circ, \alpha = 90^\circ)$ for which F goes to infinity. The evaluation goes as follows: For $\alpha = 90^\circ$,

$$E = \sin \varphi \quad (\text{A-6})$$

$$F = \ln \left(\frac{1 + \sin \varphi}{\cos \varphi} \right) \quad (\text{A-7})$$

For $\alpha = 0^\circ$,

$$E = F = \varphi \quad (\text{in radians}) \quad (\text{A-8})$$

Otherwise, perform the following recursion. Set:

$$X_0 = 0.0 \quad ,$$

$$Y_0 = 1.0 \quad ,$$

$$Z_0 = 1.0 \quad ,$$

$$P_0 = 1.0 \quad .$$

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$$Q_0 = 0.0 ,$$

$$R_0 = 1.0 ,$$

$$T_0 = 1.0 ,$$

$$\sin \varphi_0 = \sin \varphi ,$$

$$k_0 = \sin \alpha$$

(A-9)

Perform the following iteration:

$$\cos \varphi_n = \sqrt{1 - \sin^2 \varphi_n} ,$$

$$k'_n = \sqrt{1 - k_n^2} ,$$

$$P_{n+1} = \frac{2P_n - k_n^2 T_n}{1 + k'_n} ,$$

$$Q_{n+1} = Q_n + T_n \frac{k_n^2 \sin \varphi_n \cos \varphi_n}{1 + \sqrt{1 - k_n^2 \sin^2 \varphi_n}} ,$$

$$T_{n+1} = (1 + k'_n) T_n ,$$

$$\sin \varphi_{n+1} = \frac{(1 + k'_n) \sin \varphi_n}{1 + \sqrt{1 - k_n^2 \sin^2 \varphi_n}} ,$$

$$k_{n+1} = \frac{1 - k'_n}{1 + k'_n} ,$$

$$k_{n+1} = \sqrt{1 - k_{n+1}^2} .$$

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$$R_{n+1} = (1 + k_{n+1})R_n \quad (A-10)$$

This resursion process, resulting in a decreasing sequence of values of k_n is carried out until

$$k_m < \epsilon \quad (A-11)$$

where ϵ is an arbitrary small positive number. At this point,

$$E \approx P_m \varphi_m + Q_m ,$$

$$F \approx R_m \varphi_m \quad (A-12)$$

Accuracies to at least four places have been obtained for $\epsilon = 10^{-8}$ and results satisfactory for cross section computations can be obtained for larger values of ϵ . The machine time required for this computation is quite small.

A.3 Bessel Functions

Section 2.1.1.2 contains a method for deriving high frequency cross section solutions which contain linear combinations of the Bessel functions $J_0(x)$, $J_1(x)$, and $J_2(x)$. Numerical tabulations of these functions are contained in Reference 3. The following polynomial approximations, taken from Reference 2, can be used to evaluate Bessel functions with an accuracy sufficient for cross section computations.

For $-3 < x < 3$

$$\begin{aligned} J_0(x) \approx & 1.0 - 2.2499997\left(\frac{x}{3}\right)^2 + 1.2656208\left(\frac{x}{3}\right)^4 - 0.3163866\left(\frac{x}{3}\right)^6 + \\ & + 0.0444479\left(\frac{x}{3}\right)^8 - 0.0039444\left(\frac{x}{3}\right)^{10} + 0.00021\left(\frac{x}{3}\right)^{12} \end{aligned} \quad (A-13)$$

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$$J_1(x) \approx x \left[0.5 - 0.56249985 \left(\frac{x}{3}\right)^2 + 0.21093573 \left(\frac{x}{3}\right)^4 - 0.03954289 \left(\frac{x}{3}\right)^6 + \right. \\ \left. + 0.00443319 \left(\frac{x}{3}\right)^8 - 0.00031761 \left(\frac{x}{3}\right)^{10} + 0.00001109 \left(\frac{x}{3}\right)^{12} \right] \quad (A-14)$$

For $3 < x < \infty$

$$J_0(x) = \frac{f_0 \cos \theta_0}{\sqrt{x}}, \quad J_1(x) = \frac{f_1 \cos \theta_1}{\sqrt{x}} \quad (A-15)$$

where

$$f_0 = 0.79788456 - 0.00000077 \left(\frac{3}{x}\right) - 0.00552740 \left(\frac{3}{x}\right)^2 - 0.00009512 \left(\frac{3}{x}\right)^3 + \\ + 0.00137237 \left(\frac{3}{x}\right)^4 - 0.00072805 \left(\frac{3}{x}\right)^5 + 0.00014476 \left(\frac{3}{x}\right)^6 \quad (A-16)$$

$$f_1 = 0.79788456 + 0.00000156 \left(\frac{3}{x}\right) + 0.01659667 \left(\frac{3}{x}\right)^2 + \\ + 0.00017105 \left(\frac{3}{x}\right)^3 - 0.00249511 \left(\frac{3}{x}\right)^4 + 0.00113653 \left(\frac{3}{x}\right)^5 - \\ - 0.00020033 \left(\frac{3}{x}\right)^6 \quad (A-17)$$

$$\theta_0 = x - 0.78539816 - 0.04166397 \left(\frac{3}{x}\right) - 0.00003954 \left(\frac{3}{x}\right)^2 + \\ + 0.00262573 \left(\frac{3}{x}\right)^3 - 0.00054125 \left(\frac{3}{x}\right)^4 - 0.00029333 \left(\frac{3}{x}\right)^5 + \\ + 0.00013558 \left(\frac{3}{x}\right)^6 \quad (A-18)$$

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$$\begin{aligned}
 \theta_1 = x - 2.35619449 + 0.12499612\left(\frac{3}{x}\right) + 0.00005650\left(\frac{3}{x}\right)^2 - \\
 - 0.00637879\left(\frac{3}{x}\right)^3 + 0.00074348\left(\frac{3}{x}\right)^4 + 0.00079824\left(\frac{3}{x}\right)^5 - \\
 - 0.00029166\left(\frac{3}{x}\right)^6
 \end{aligned}
 \tag{A-19}$$

$J_2(x)$ and higher order functions can be obtained by the following recursion formula:

$$J_{n+2}(x) = \left(\frac{2(n+1)}{x}\right) J_{n+1}(x) - J_n(x) \tag{A-20}$$

A.4 Q Functions

In Section 2.1.1.2, the following function was defined:

$$Q(Z) = \frac{1}{\sqrt{\pi}} \int_{-Z}^{\infty} e^{-t^2} dt = \frac{1 + \operatorname{erf}(Z)}{2} \tag{A-21}$$

There are numerical tables of the error function, $\operatorname{erf}(Z)$, in Reference 2.

The following method may be used to evaluate $\operatorname{erf}(Z)$ in place of tables:

$$\begin{aligned}
 -Y; Z < 0 \\
 \operatorname{erf}(Z) = 0; Z = 0 \\
 Y; Z > 0
 \end{aligned}
 \tag{A-22}$$

where

$$Y = 1.0 - \left[0.3480242 p - 0.0958798 p^2 + 0.7478556 p^3 \right] e^{-Z^2} \tag{A-23}$$

and

$$P = \frac{1.0}{1.0 + 0.47047 Z} \quad (\text{A-24})$$

A.5 F Functions

In the high frequency scattering computations from conical surfaces the following function is required:

$$F(\tau) = \frac{e^{-i\tau^2}}{\tau} \int_0^\tau e^{it^2} dt \quad (\text{A-25})$$

where

$$\tau = \sqrt{2ka \csc \alpha \cos(\alpha \pm \theta)} \quad (\text{A-26})$$

The parameters which determine τ are defined in Section 2.1.1.2. τ can be either a real or pure imaginary number depending upon the value of $(\alpha \pm \theta)$. If we write (2.1 - 38) in terms of the magnitude of τ , the following expression can be obtained:

$$F(\tau) = \frac{\sqrt{\frac{\pi}{2}} e^{-i|\tau|^2}}{|\tau|} \left[c\left(\sqrt{\frac{2}{\pi}} |\tau|\right) + i s\left(\sqrt{\frac{2}{\pi}} |\tau|\right) \right] ; (\alpha \pm \theta) < \frac{\pi}{2} \quad (\text{A-27})$$

$$\frac{\sqrt{\frac{\pi}{2}} e^{i|\tau|^2}}{i|\tau|} \left[s\left(\sqrt{\frac{2}{\pi}} |\tau|\right) + i c\left(\sqrt{\frac{2}{\pi}} |\tau|\right) \right] ; (\alpha \pm \theta) > \frac{\pi}{2}$$

where

$$\tau = \pm \sqrt{2ka \csc \alpha \cos(\alpha \pm \theta)} \quad (\text{A-28})$$

The Fresnel integrals, $C(X)$ and $S(X)$, are defined as follows:

$$C(X) = \int_0^X \cos\left(\frac{\pi}{2} t^2\right) dt \quad (A-29)$$

$$S(X) = \int_0^X \sin\left(\frac{\pi}{2} t^2\right) dt \quad (A-30)$$

Tabulations of these functions are contained in Reference 2. The following approximations, of sufficient accuracy for cross section computations, can be used in lieu of tables.

$$C(X) = \frac{1}{2} + f(X) \sin\left(\frac{\pi}{2} X^2\right) - g(X) \cos\left(\frac{\pi}{2} X^2\right) \quad (A-31)$$

$$S(X) = \frac{1}{2} - f(X) \cos\left(\frac{\pi}{2} X^2\right) - g(X) \sin\left(\frac{\pi}{2} X^2\right) \quad (A-32)$$

where

$$f(X) = \frac{1.0 + 0.926 X}{2.0 + 1.792 X + 3.104 X^2} \quad (A-33)$$

$$g(X) = \frac{1.0}{2.0 + 4.142 X + 3.492 X^2 + 6.670 X^3} \quad (A-34)$$

A plot of $|F(\tau)|$ vs τ^2 is contained in Figure A-1, and Table A-1 contains numerical tabulations of this function.

A.6 Diffraction Coefficients

The following diffraction coefficients are used in the solutions for scattering from sphere-cones, cylindrical, and cone-cylinder-flare bodies contained in Section* 2.1.2.1 and 2.1.3.

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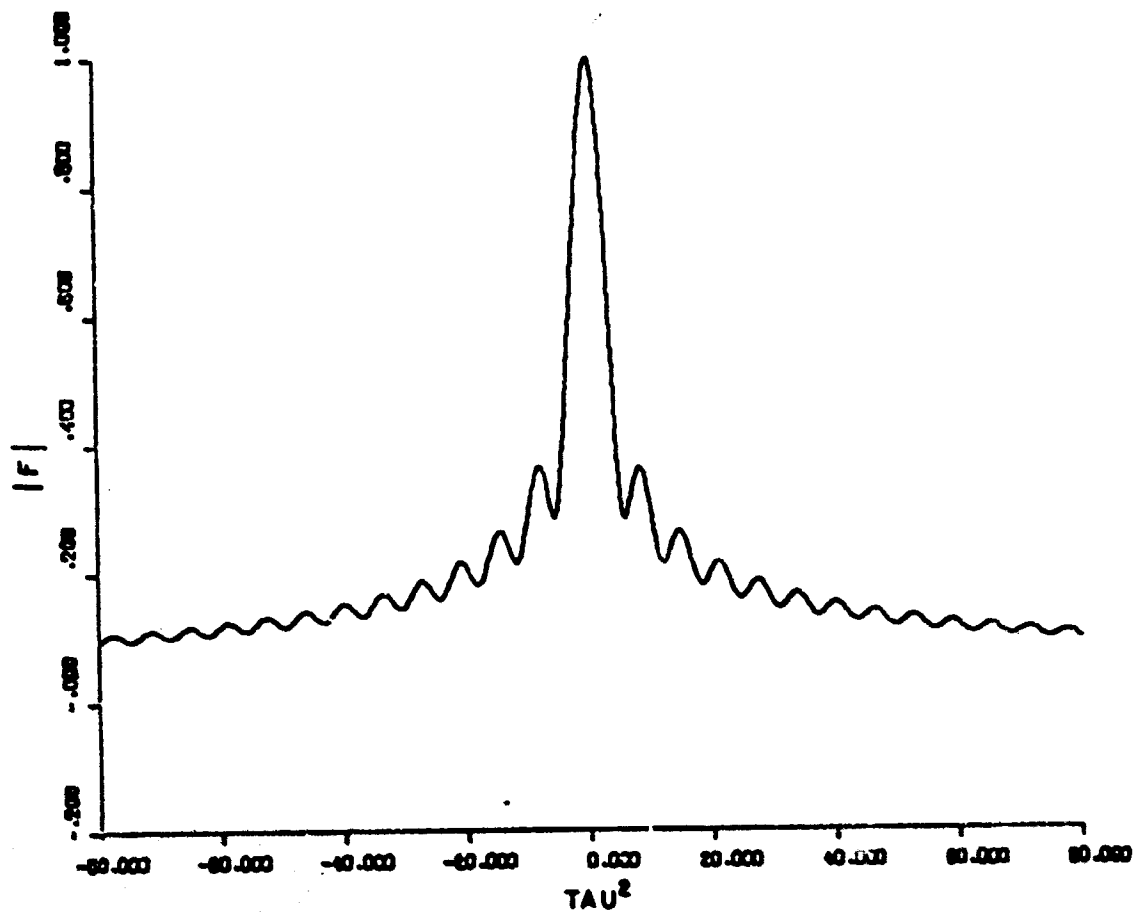


FIGURE A-1. MAGNITUDE OF F VERSUS TAU^2

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TABLE A-1. F FUNCTIONS

θ	Real F	Imag F	F	Arg F (degrees)
-80.00				
-79.75	-.090472	-.034712	.096903	200.990537
-79.50	-.097934	-.011078	.098558	185.453618
-79.25	-.099324	.013707	.100265	172.142593
-79.00	-.094536	.038104	.101927	158.047264
-78.75	-.083850	.060595	.103454	144.145794
-78.50	-.067912	.079775	.104767	130.407739
-78.25	-.047698	.094439	.105801	116.796686
-78.00	-.024452	.103663	.106507	103.272334
-77.75	.000388	.106854	.106855	89.792061
-77.50	.025280	.103798	.106832	76.312094
-77.25	.048675	.094664	.106445	62.788492
-77.00	.069111	.080004	.105721	49.178113
-76.75	.085306	.060713	.104705	35.439814
-76.50	.096237	.037979	.103460	21.536035
-76.25	.101208	.013207	.102067	7.434966
-76.00	.099888	-.012064	.100615	353.113313
-75.75	.092342	-.036264	.099207	338.559549
-75.50	.079015	-.057878	.097945	323.777230
-75.25	.060719	-.075553	.096928	308.787620
-75.00	.038578	-.088172	.096243	293.630634
-74.75	.013956	-.094933	.095953	278.363149
-74.50	-.011621	-.095392	.096097	263.054262
-74.25	-.036564	-.089499	.096680	247.777984
-74.00	-.059318	-.077598	.097674	232.604836
-73.75	-.078459	-.060409	.099020	217.594220
-73.50	-.092782	-.038981	.100638	202.789159
-73.25	-.101360	-.014634	.102431	188.214066
-73.00	-.103697	.011127	.104292	173.875282
-72.75	-.099568	.036706	.106118	159.763458
-72.50	-.089228	.060510	.107710	145.856797
-72.25	-.073299	.081052	.109280	132.124332
-72.00	-.052754	.097044	.110856	118.528762
-71.75	-.028855	.107475	.112481	105.028680
-71.50	-.003081	.111678	.114220	91.580215
-71.25	.022472	.109370	.116057	78.138228
-71.00	.047981	.100676	.117946	64.657263
-70.75	.069509	.085114	.119863	51.092474
-70.50	.087071	.066572	.121804	37.400740
-70.25	.099273	.043252	.123766	22.542202
-70.00	.105331	.017593	.125740	9.482395
-69.75	.104846	-.008813	.125216	355.195068
-69.50	.097825	-.034324	.123672	340.665808
-69.25	.084881	-.057345	.122271	325.894686
-69.00	.066212	-.076433	.121124	310.901369
-68.75	.043546	-.090343	.120126	295.724612
-68.50	.018082	-.098306	.119295	280.422031
-68.25	-.008607	-.099685	.118636	265.065320
-68.00	-.034862	-.094409	.118040	249.732690
-67.75	-.059046	-.082779	.117500	234.499793
-67.50	-.079847	-.065496	.117118	219.431244
-67.25	-.095368	-.043612	.116867	204.574589
-67.00	-.105212	-.018471	.116821	189.957601
-66.75	-.108544	.004374	.116966	175.588648
-66.50	-.105132	.035260	.117387	161.459315

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T^2	Real F	Imag F	F	Arg F (degrees)
-66.25	-.095164	.060515	.112775	147.547701
-66.00	-.079234	.082561	.114431	133.822185
-65.75	-.058314	.100016	.115774	120.244409
-65.50	-.033687	.111776	.116742	106.771687
-65.25	-.006872	.117089	.117291	93.358736
-65.00	.020469	.115602	.117401	79.958901
-64.75	.046636	.107383	.117073	66.525072
-64.50	.069993	.092920	.116332	53.010552
-64.25	.089077	.073091	.115225	39.370091
-64.00	.102680	.049111	.113821	25.561347
-63.75	.109936	.022461	.112207	11.546972
-63.50	.110367	-.005210	.110489	357.297475
-63.25	.103918	-.032176	.108786	342.794823
-63.00	.090966	-.056761	.107223	328.036438
-62.75	.072290	-.077416	.105921	313.038850
-62.50	.049031	-.092839	.104991	297.639829
-62.25	.022619	-.102045	.104523	282.497722
-62.00	-.005314	-.104437	.104572	267.087100
-61.75	-.033034	-.099834	.105157	251.690929
-61.50	-.058815	-.08492	.106254	236.390733
-61.25	-.081041	-.071089	.107802	221.257113
-61.00	-.098316	-.048682	.109708	206.342794
-60.75	-.109542	-.022644	.111858	191.679348
-60.50	-.113996	.005421	.114124	177.277423
-60.25	-.111372	.033775	.116380	163.129423
-60.00	-.101804	.060655	.118504	149.213336
-59.75	-.085860	.084384	.120385	135.496652
-59.50	.4505	.103472	.121932	121.939726
-59.25	.0048	.116714	.123072	108.490371
-59.00	-.011056	.123261	.123756	95.125689
-58.75	.017737	.122681	.123956	81.773317
-58.50	.045542	.111981	.123572	68.392320
-58.25	.070622	.100612	.122924	54.933972
-58.00	.091405	.080444	.121763	41.350705
-57.75	.106575	.055710	.121258	27.597461
-57.50	.115166	.027933	.118505	13.633727
-57.25	.116611	-.001167	.116617	59.426421
-57.00	.110791	-.029783	.114724	344.953659
-56.75	.098036	-.056125	.112965	330.209149
-56.50	.079110	-.078542	.111477	315.206445
-56.25	.055164	-.095617	.110389	299.981843
-56.00	.027608	-.106260	.109803	284.594402
-55.75	-.001682	-.109777	.109790	269.121931
-55.50	-.031066	-.105915	.110377	253.652877
-55.25	-.058654	-.094878	.111544	238.275617
-55.00	-.082718	-.077319	.113228	223.067756
-54.75	-.101745	-.054300	.115328	208.088052
-54.50	-.114526	-.027226	.117718	193.372438
-54.25	-.120236	.002237	.120257	178.934067
-54.00	-.118488	.032267	.122803	164.766212
-53.75	-.109354	.061000	.125217	150.846505
-53.50	-.093372	.086641	.127377	137.141286
-53.25	-.071502	.107582	.129176	123.609324
-53.00	-.045032	.122499	.130531	110.204637
-52.75	-.015735	.130437	.131383	96.878446
-52.50	.014725	.130872	.131598	83.580445

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T^2	<u>Real F</u>	<u>Imag F</u>	<u> F </u>	<u>Arg F</u> (degrees)
-52.25	.044405	.123743	.131469	70.259649
-52.00	.071452	.109462	.130718	56.865088
-51.75	.094170	.088886	.129494	43.346630
-51.50	.111120	.063270	.127870	29.656217
-51.25	.121221	.034187	.125950	15.749808
-51.00	.123808	.003437	.123856	1.590266
-50.75	.118684	-.027070	.121732	347.151310
-50.50	.106130	-.055431	.119734	332.422313
-50.25	.086891	-.079863	.118018	317.413267
-50.00	.062133	-.098823	.116733	302.158588
-49.75	.033369	-.111099	.116002	286.718017
-49.50	.002373	-.115889	.115913	271.173069
-49.25	-.028937	-.112853	.116504	255.618662
-49.00	-.058611	-.102139	.117760	240.151355
-48.75	-.084792	-.084370	.119616	224.857139
-48.50	-.105832	-.060615	.121961	209.801953
-48.25	-.120392	-.032319	.124655	195.026829
-48.00	-.127534	-.001219	.127540	180.547728
-47.75	-.126772	.030766	.130452	166.358734
-47.50	-.118113	.061651	.133235	152.436840
-47.25	-.102056	.089511	.135748	138.746845
-47.00	-.079961	.112545	.137868	125.245515
-46.75	-.051996	.129445	.139497	111.884681
-46.50	-.021052	.138980	.140565	98.613335
-46.25	.011362	.140571	.141029	85.378918
-46.00	.043234	.134079	.140877	72.128116
-45.75	.072574	.119870	.140128	58.807434
-45.50	.097542	.098788	.138829	45.363868
-45.25	.116556	.072116	.137062	31.745986
-45.00	.128399	.041486	.134935	17.905745
-44.75	.132294	.008790	.132586	3.801350
-44.50	.127953	-.023943	.130174	349.401368
-44.25	.115600	-.054669	.127875	334.689994
-44.00	.095960	-.081458	.125871	319.672835
-43.75	.070214	-.102615	.124337	304.381845
-43.50	.039933	-.116785	.123423	288.877361
-43.25	.006976	-.123040	.123238	273.245245
-43.00	-.026617	-.120942	.123836	257.588264
-42.75	-.058758	-.110568	.125211	242.013038
-42.50	-.087435	-.092511	.127291	226.615960
-42.25	-.110841	-.067848	.129958	211.471578
-42.00	-.127486	-.038071	.133049	196.627204
-41.75	-.136294	-.005002	.136385	182.101914
-41.50	-.136667	.029323	.139778	167.890470
-41.25	-.128533	.062777	.143044	153.968782
-41.00	-.112347	.093274	.146020	140.299532
-40.75	-.089069	.118901	.148562	126.836891
-40.50	-.060105	.138036	.150554	113.529965
-40.25	-.027227	.149450	.151910	100.325041
-40.00	.007541	.152389	.152576	87.166906
-39.75	.042045	.146623	.152532	73.999547
-39.50	.074131	.132460	.151793	60.766583
-39.25	.101785	.110735	.150408	47.411737
-39.00	.123254	.082760	.148461	33.879709
-38.75	.137162	.050242	.146074	20.117813
-38.50	.142591	.015185	.143397	6.078759

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<u>T²</u>	<u>Real F</u>	<u>Imag F</u>	<u> F </u>	<u>Arg F (degrees)</u>
-38.25	.139149	-.020238	.140613	351.724912
-38.00	.126992	-.053816	.137925	337.034068
-37.75	.106821	-.083439	.135546	322.006235
-37.50	.079838	-.107228	.133686	306.669995
-37.25	.047681	-.123657	.132531	291.086101
-37.00	.012318	-.131646	.132221	275.345641
-36.75	-.024067	-.130635	.132833	259.561246
-36.50	-.059215	-.120619	.134370	243.852389
-36.25	-.090926	-.102156	.136760	228.328659
-36.00	-.117200	-.076331	.139865	213.075933
-35.75	-.136361	-.044699	.143500	198.148864
-35.50	-.147167	-.009182	.147453	183.570211
-35.25	-.148885	.028038	.151502	169.335125
-35.00	-.141343	.064659	.155430	155.417711
-34.75	-.124945	.098401	.159041	141.777650
-34.50	-.100651	.127147	.162164	128.365641
-34.25	-.069918	.149075	.164657	115.127288
-34.00	-.034615	.162775	.166415	102.005524
-33.75	.003091	.167339	.167368	88.941926
-33.50	.040866	.162423	.167465	75.877298
-33.25	.076357	.148268	.166775	62.751891
-33.00	.107333	.125696	.165287	49.505622
-32.75	.131829	.096056	.163112	36.078646
-32.50	.148267	.061150	.160382	22.412736
-32.25	.155561	.023121	.157270	8.453899
-32.00	.153186	-.015677	.153986	354.156738
-31.75	.141212	-.052823	.150769	339.490791
-31.50	.120312	-.085981	.147877	324.448534
-31.25	.091716	-.113044	.145570	309.053659
-31.00	.057146	-.132267	.144084	293.366896
-30.75	.018709	-.142381	.143605	277.485817
-30.50	-.021231	-.142674	.144245	261.535036
-30.25	-.060196	-.133037	.146022	245.651315
-30.00	-.095750	-.113981	.148861	229.968145
-29.75	-.125646	-.086607	.152603	214.578259
-29.50	-.147975	-.052543	.157026	199.548958
-29.25	-.161280	-.013847	.161873	184.907166
-29.00	-.164654	.027117	.166872	170.647795
-28.75	-.157803	.067824	.171761	156.741891
-28.50	-.141065	.105743	.176297	143.144687
-28.25	-.115397	.138494	.180269	129.802052
-28.00	-.082322	.164000	.183502	116.654920
-27.75	-.043835	.180616	.185859	103.641923
-27.50	-.002290	.187235	.187249	90.700660
-27.25	.039752	.183365	.187625	77.768087
-27.00	.079672	.169162	.186985	64.730442
-26.75	.114961	.145426	.185378	51.673093
-26.50	.143375	.113559	.182900	38.380697
-26.25	.163077	.075484	.179700	24.838154
-26.00	.172754	.033527	.175977	10.982921
-25.75	.171706	-.009722	.171981	356.759354
-25.50	.159894	-.051565	.168003	342.125644
-25.25	.137949	-.089368	.164367	327.063385
-25.00	.107137	-.120720	.161406	311.588546
-24.75	.069293	-.143590	.159435	295.760727
-24.50	.026703	-.156451	.158714	279.685827

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T^2	<u>Real F</u>	<u>Imag F</u>	<u> F </u>	<u>Arg F</u> (degrees)
-24.25	-.018025	-.158388	.159411	263.507690
-24.00	-.062123	-.149154	.161574	247.388110
-23.75	-.102836	-.129193	.165125	231.480626
-23.50	-.137591	-.099625	.169872	215.907220
-23.25	-.164156	-.062178	.175537	200.745280
-23.00	-.180787	-.019086	.181792	186.026457
-22.75	-.186341	.027038	.188292	171.743998
-22.50	-.180350	.073366	.194701	157.863508
-22.25	-.163060	.117027	.200708	144.333221
-22.00	-.135423	.155283	.206040	131.091884
-21.75	-.099048	.185704	.210467	118.073904
-21.50	-.056102	.206318	.213810	105.212170
-21.25	-.009190	.215743	.215939	92.439188
-21.00	.038809	.213278	.216780	79.687149
-20.75	.084912	.198952	.216314	66.887390
-20.50	.126220	.173534	.214583	53.969686
-20.25	.160098	.138494	.211689	40.861763
-20.00	.184339	.095918	.207801	27.489556
-19.75	.197311	.048387	.203157	13.778884
-19.50	.198059	-.001177	.198063	359.659483
-19.25	.186380	-.049688	.192890	345.072458
-19.00	.162841	-.094085	.188067	329.981866
-18.75	.128751	-.131523	.184051	314.389813
-18.50	.086095	-.159551	.181298	298.351615
-18.25	.037417	-.176272	.180200	281.984193
-18.00	-.014331	-.180465	.181033	265.459596
-17.75	-.065965	-.171669	.183906	248.980224
-17.50	-.114266	-.150225	.188744	232.742248
-17.25	-.156174	-.117266	.195299	216.901553
-17.00	-.188986	-.074652	.203196	201.554777
-16.75	-.210522	-.024874	.211987	186.738445
-16.50	-.219274	.029100	.221197	172.440468
-16.25	-.214505	.083995	.230364	158.615831
-16.00	-.196306	.136433	.239061	145.200666
-15.75	-.165605	.183135	.246908	132.122342
-15.50	-.124120	.221130	.253583	119.305507
-15.25	-.074268	.247941	.258825	106.674993
-15.00	-.019022	.261748	.262438	94.156581
-14.75	.038260	.261508	.264292	81.676446
-14.50	.094038	.247034	.264327	69.159856
-14.25	.144805	.219022	.262563	56.529531
-14.00	.187307	.179019	.259098	43.704044
-13.75	.218742	.129347	.254124	30.596742
-13.50	.236948	.072967	.247928	17.115976
-13.25	.240541	.013313	.240910	3.167892
-13.00	.229020	-.045914	.233577	348.663648
-12.75	.202807	-.100967	.226551	333.533636
-12.50	.163246	-.148288	.220541	317.748953
-12.25	.112530	-.184721	.216298	301.349292
-12.00	.053588	-.207725	.214526	284.465503
-11.75	-.010085	-.215532	.215768	267.321064
-11.50	-.074628	-.207277	.220303	250.199144
-11.25	-.136046	-.183067	.228084	233.382118
-11.00	-.190453	-.143994	.238761	217.091523
-10.75	-.234308	-.092089	.251755	201.456056
-10.50	-.264645	-.030217	.266365	186.513779

T^2	Real F	Imag F	F	Arg F (degrees)
-10.25	-.279263	.038079	.281847	172.235221
-10.00	-.276877	.108782	.297480	158.556662
-9.75	-.257222	.177632	.312596	145.371809
-9.50	-.221087	.240385	.326596	132.605427
-9.25	-.170297	.293067	.338953	120.160243
-9.00	-.107622	.332226	.349223	107.949317
-8.75	-.036637	.355153	.357038	95.889716
-8.50	.038476	.360066	.362116	83.900631
-8.25	.113165	.346242	.364266	71.900581
-8.00	.182174	.314086	.363397	59.803991
-7.75	.242816	.265148	.359531	47.517274
-7.50	.289251	.202044	.352828	34.934563
-7.25	.318738	.128349	.343610	21.933593
-7.00	.328855	.048403	.332398	8.372995
-6.75	.318270	-.032923	.319968	354.094054
-6.50	.288849	-.110496	.307395	338.932964
-6.25	.235765	-.179214	.296099	322.753190
-6.00	.167171	-.234304	.287828	305.507059
-5.75	.084699	-.271613	.284513	287.319494
-5.50	-.007301	-.287858	.287951	268.547180
-5.25	-.103684	-.280850	.299378	249.736838
-5.00	-.198842	-.249644	.319155	231.462558
-4.75	-.287002	-.194635	.346775	214.143811
-4.50	-.362546	-.117576	.381135	197.968128
-4.25	-.420332	-.021517	.420882	182.930397
-4.00	-.455982	.089322	.464648	168.916718
-3.75	-.466152	.209750	.511168	155.774143
-3.50	-.448738	.333863	.559312	143.350589
-3.25	-.403020	.455342	.608080	131.511811
-3.00	-.329737	.567781	.656583	120.145765
-2.75	-.231079	.665026	.704030	109.161001
-2.50	-.110608	.741507	.749711	98.484068
-2.25	.026907	.792538	.792995	88.055513
-2.00	.175714	.814584	.833320	77.827214
-1.75	.329358	.805460	.870197	67.759989
-1.50	.481004	.764471	.903206	57.821960
-1.25	.623775	.692474	.931995	47.987731
-1.00	.751083	.591867	.956260	38.238774
-.75	.856911	.466549	.975687	28.566248
-.50	.935933	.321914	.989747	18.980670
-.25	.983236	.165437	.997057	9.551010
0.00				
.25	.983236	-.165437	.997057	350.444990
.50	.935933	-.321914	.989747	341.019330
.75	.856911	-.466549	.975687	331.433752
1.00	.751083	-.591867	.956260	321.761226
1.25	.623775	-.692474	.931995	312.012269
1.50	.481004	-.764471	.903206	302.178040
1.75	.329358	-.805460	.870197	292.240011
2.00	.175714	-.814584	.833320	282.172786
2.25	.026907	-.792538	.792995	271.944487
2.50	-.110608	-.741507	.749711	261.515932
2.75	-.231079	-.665026	.704030	250.838999
3.00	-.329737	-.567781	.656583	239.854295
3.25	-.403020	-.455342	.608080	228.488189
3.50	-.448738	-.333863	.559312	216.649411

τ^2	Real F	Imag F	F	Arg F (degrees)
3.75	-.466152	-.209750	.511168	204.225857
4.00	-.455922	-.089322	.464648	191.083282
4.25	-.420332	.021517	.420862	177.069603
4.50	-.362546	.117576	.381135	162.031872
4.75	-.287002	.194635	.346775	145.856189
5.00	-.198842	.249844	.319155	128.537442
5.25	-.103884	.280850	.299378	110.263162
5.50	-.007301	.287858	.287951	91.452820
5.75	.084699	.271613	.284513	72.680506
6.00	.167171	.234304	.287828	54.497941
6.25	.235705	.179214	.296099	37.246810
6.50	.286849	.110496	.307395	21.067036
6.75	.318270	.032923	.319968	5.905946
7.00	.328855	-.048403	.332398	351.627005
7.25	.318738	-.128349	.343610	338.066407
7.50	.289251	-.202044	.352828	325.065437
7.75	.242816	-.265148	.359531	312.482726
8.00	.182774	-.314088	.363397	300.196009
8.25	.113165	-.346242	.364266	288.099419
8.50	.038476	-.360066	.362116	276.099369
8.75	-.036637	-.355153	.357038	264.110284
9.00	-.107622	-.332226	.349223	252.050683
9.25	-.170297	-.293067	.336953	239.839757
9.50	-.221067	-.240385	.326596	227.394573
9.75	-.257222	-.177632	.312596	214.628191
10.00	-.276877	-.108782	.297480	201.449338
10.25	-.279263	-.038079	.281847	187.764779
10.50	-.264645	.030217	.266365	173.486221
10.75	-.234306	.092089	.251755	158.543944
11.00	-.190453	.143994	.238761	142.908477
11.25	-.136046	.183067	.228084	126.617862
11.50	-.074628	.207277	.220303	109.800856
11.75	-.010085	.215532	.215768	92.678936
12.00	.053586	.207725	.214526	75.534497
12.25	.112550	.184721	.216298	58.650708
12.50	.163246	.148288	.220541	42.251047
12.75	.202807	.100967	.226551	26.466364
13.00	.229020	.045914	.233577	11.336302
13.25	.240541	-.013313	.240910	356.832108
13.50	.236948	-.072967	.247928	342.884024
13.75	.218742	-.129347	.254124	329.403258
14.00	.187307	-.179019	.259098	316.295956
14.25	.144805	-.219022	.262563	303.470469
14.50	.094038	-.247034	.264327	290.840144
14.75	.038260	-.261508	.264292	278.323554
15.00	-.019022	-.261748	.262438	265.843419
15.25	-.074280	-.247941	.258825	253.325077
15.50	-.124120	-.221130	.253583	240.664403
15.75	-.165605	-.183135	.246908	227.877654
16.00	-.196306	-.136433	.239061	214.790334
16.25	-.214505	-.083945	.230364	201.384169
16.50	-.219274	-.029100	.221197	187.559532
16.75	-.210522	.024874	.211987	173.261555
17.00	-.188980	.074652	.203196	158.445223
17.25	-.156174	.117260	.195299	143.098447
17.50	-.114286	.150225	.188744	127.257752

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T^2	Real F	Imag F	$ F $	Arg F (degrees)
17.75	-.065965	.171669	.183906	111.019776
18.00	-.014331	.180465	.181033	94.540404
18.25	.037417	.176272	.180200	78.015807
18.50	.086095	.159551	.181298	61.648385
18.75	.128751	.131523	.184051	45.610187
19.00	.162841	.094085	.188067	30.018134
19.25	.186380	.049688	.192890	14.927542
19.50	.198059	.001177	.198063	.340517
19.75	.197311	-.048387	.203157	346.221116
20.00	.184339	-.095918	.207801	332.510444
20.25	.160098	-.138494	.211689	319.138237
20.50	.126220	-.173524	.214583	306.030314
20.75	.084912	-.198952	.216314	293.112610
21.00	.038809	-.213278	.216780	280.312851
21.25	-.009190	-.215743	.215939	267.560812
21.50	-.056102	-.206318	.213810	254.787830
21.75	-.099048	-.185704	.210467	241.926096
22.00	-.135423	-.155283	.206040	228.998116
22.25	-.163060	-.117027	.200708	215.666779
22.50	-.180350	-.073366	.194701	202.136492
22.75	-.186341	-.027038	.188292	188.256002
23.00	-.180787	.019086	.181792	173.973543
23.25	-.164156	.062178	.175537	159.254720
23.50	-.137591	.099625	.169872	144.092780
23.75	-.102836	.129193	.165125	128.519374
24.00	-.062123	.149154	.161574	112.611890
24.25	-.018025	.158388	.159411	96.492310
24.50	.026703	.156451	.158714	80.314173
24.75	.069293	.143590	.159435	64.239273
25.00	.107137	.120720	.161406	48.411454
25.25	.137949	.089368	.164367	32.936615
25.50	.159894	.051565	.168003	17.874356
25.75	.171706	.009722	.171981	3.240646
26.00	.172754	-.033527	.175977	349.017079
26.25	.163077	-.075484	.179700	335.161846
26.50	.143375	-.113559	.182900	321.619303
26.75	.114961	-.145426	.185378	308.326907
27.00	.079672	-.169162	.186985	295.219558
27.25	.039752	-.183365	.187625	282.231913
27.50	-.002290	-.187235	.187249	269.299340
27.75	-.043635	-.180616	.185859	256.358077
28.00	-.082322	-.164000	.183502	243.345080
28.25	-.115397	-.138494	.180269	230.197948
28.50	-.141065	-.105743	.176297	216.855313
28.75	-.157803	-.067824	.171761	203.258109
29.00	-.164654	-.027117	.166872	189.352205
29.25	-.161280	.013847	.161873	175.092834
29.50	-.147975	.052543	.157026	160.451042
29.75	-.125646	.086607	.152603	145.421741
30.00	-.095750	.113981	.148861	130.031855
30.25	-.060196	.133037	.146022	114.345685
30.50	-.021231	.142674	.144245	98.463964
30.75	.018709	.142381	.143605	82.514183
31.00	.057146	.132267	.144084	66.633104
31.25	.091716	.113044	.145570	50.946341
31.50	.120312	.085981	.147877	35.551466

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T^2	Real F	Imag F	F	Arg F (degrees)
31.75	.141212	.052823	.150769	20.509209
32.00	.153166	.015677	.153986	5.843262
32.25	.155561	-.023121	.157270	351.546101
32.50	.146267	-.061150	.160382	337.587264
32.75	.131829	-.096056	.163112	323.921354
33.00	.107333	-.125696	.165287	310.494378
33.25	.076357	-.148268	.166775	297.248109
33.50	.040866	-.162423	.167485	284.122702
33.75	.003091	-.167339	.167368	271.058074
34.00	-.034615	-.162775	.166415	257.994476
34.25	-.069918	-.149075	.164657	244.872712
34.50	-.100651	-.127147	.162164	231.634359
34.75	-.124945	-.098401	.159041	218.222350
35.00	-.141343	-.064659	.155430	204.582289
35.25	-.148885	-.028038	.151502	190.664875
35.50	-.147167	.009182	.147453	176.425789
35.75	-.136361	.044699	.143500	161.851136
36.00	-.117200	.076331	.139865	146.924067
36.25	-.090926	.102156	.136760	131.671341
36.50	-.059215	.120619	.134370	116.147611
36.75	-.024067	.130635	.132833	100.438754
37.00	.012318	.131646	.132221	84.654359
37.25	.047681	.123657	.132531	68.913899
37.50	.079836	.107228	.133686	53.330005
37.75	.106821	.083439	.135546	37.993765
38.00	.126942	.053816	.137925	22.965932
38.25	.139149	.020238	.140613	8.275088
38.50	.142591	-.015185	.143397	353.921241
38.75	.137162	-.050242	.146074	339.882167
39.00	.123254	-.082760	.148461	326.120291
39.25	.101785	-.110735	.150408	312.588263
39.50	.074131	-.132460	.151793	299.233417
39.75	.042045	-.146623	.152532	286.000453
40.00	.007541	-.152389	.152576	272.833094
40.25	-.027227	-.149450	.151910	259.674959
40.50	-.060105	-.138036	.150554	246.470035
40.75	-.089069	-.118901	.148562	233.163109
41.00	-.112347	-.093274	.146020	219.700468
41.25	-.128533	-.062777	.143044	206.031218
41.50	-.136667	-.029323	.139778	192.109530
41.75	-.136294	.005002	.136385	177.898086
42.00	-.127466	.038071	.133049	163.372796
42.25	-.110841	.067846	.129958	148.528422
42.50	-.087435	.092511	.127291	133.384100
42.75	-.058158	.110566	.125211	117.986962
43.00	-.026617	.120942	.123836	102.411736
43.25	.006476	.123040	.123238	86.754755
43.50	.034933	.116785	.123423	71.122639
43.75	.070214	.102615	.124337	55.618155
44.00	.095960	.081458	.125871	40.327165
44.25	.115600	.054669	.127875	25.310006
44.50	.127953	.023943	.130174	10.598632
44.75	.132294	-.008790	.132586	356.198650
45.00	.128399	-.041486	.134935	342.094255
45.25	.115556	-.072114	.137062	328.254014
45.50	.097542	-.098768	.138829	314.636132

τ^2	Real F	Imag F	F	Arg F (degrees)
45.75	.072574	-.119870	.140128	301.192566
46.00	.043234	-.134079	.140877	267.871884
46.25	.011362	-.140571	.141029	274.621082
46.50	-.021052	-.138980	.140565	261.386655
46.75	-.051996	-.129445	.139497	248.115319
47.00	-.079561	-.112595	.137868	234.754445
47.25	-.102056	-.089511	.135748	221.253155
47.50	-.118113	-.061651	.133235	207.563160
47.75	-.126772	-.030766	.130452	193.641266
48.00	-.127534	.001219	.127540	179.452272
48.25	-.120392	.032319	.124655	164.973171
48.50	-.105832	.060615	.121961	150.198047
48.75	-.084792	.084370	.119616	135.142861
49.00	-.058611	.102139	.117760	119.848645
49.25	-.028937	.112853	.116504	104.381338
49.50	.002373	.115889	.115913	88.826931
49.75	.033369	.111099	.116002	73.261983
50.00	.062133	.098823	.116733	57.841412
50.25	.086591	.079863	.118018	42.586733
50.50	.106130	.055431	.119734	27.577687
50.75	.118584	.027070	.121732	12.848690
51.00	.123908	-.003437	.123856	358.409734
51.25	.121221	-.034167	.125950	344.250192
51.50	.111120	-.063270	.127870	330.343783
51.75	.094170	-.088865	.129494	316.653370
52.00	.071452	-.109462	.130718	303.134912
52.25	.044405	-.123743	.131469	289.746351
52.50	.014725	-.130872	.131698	276.419555
52.75	-.015735	-.130437	.131343	263.121554
53.00	-.045082	-.122499	.130531	247.795363
53.25	-.071502	-.107582	.129176	236.390676
53.50	-.093372	-.086641	.127377	222.855714
53.75	-.109354	-.061000	.125217	209.153495
54.00	-.118488	-.032257	.122803	195.233788
54.25	-.120236	-.002237	.120257	181.065433
54.50	-.114525	.027226	.117718	166.627562
54.75	-.101745	.054300	.115328	151.911448
55.00	-.082718	.077319	.113228	136.932244
55.25	-.058554	.094878	.111544	121.724343
55.50	-.031066	.105915	.110377	106.347123
55.75	-.001652	.109777	.108790	90.874064
56.00	.027469	.106260	.106803	75.408598
56.25	.055164	.095617	.104384	60.018157
56.50	.079110	.078562	.101477	44.793555
56.75	.098035	.056125	.100465	29.790851
57.00	.110791	.029783	.100424	15.046341
57.25	.116611	.001167	.116617	.573579
57.50	.115166	-.027933	.114505	346.366273
57.75	.106575	-.055710	.120258	332.402539
58.00	.091945	-.080444	.121753	318.544245
58.25	.070435	-.100612	.122924	305.046028
58.50	.042347	-.116481	.123672	291.637680
58.75	.008787	-.122681	.123956	278.224683
59.00	-.021155	-.123261	.123756	264.873111
59.25	-.042758	-.116714	.123072	251.501829
59.50	-.061955	-.104472	.121932	238.040274

T^2	Real F	Imag F	F	Arg F (degrees)
59.75	-.085860	-.084384	.120385	224.503348
60.00	-.101304	-.060655	.118504	210.736664
60.25	-.111372	-.033775	.116380	196.870577
60.50	-.113996	-.005421	.114124	182.722577
60.75	-.109542	.022644	.111858	168.320652
61.00	-.098316	.048682	.109708	153.657266
61.25	-.081041	.071089	.107802	138.742887
61.50	-.058815	.088492	.106254	123.609267
61.75	-.033034	.099834	.105157	108.309071
62.00	-.005314	.104437	.104572	92.912900
62.25	.022619	.102046	.104523	77.502278
62.50	.049031	.092839	.104991	62.160171
62.75	.072290	.077416	.105921	46.961150
63.00	.090966	.056761	.107223	31.963562
63.25	.103918	.032178	.108766	17.205177
63.50	.110367	.005210	.110489	2.702525
63.75	.109936	-.022461	.112207	348.453028
64.00	.102680	-.049111	.113821	334.438653
64.25	.089077	-.073091	.115245	320.629909
64.50	.069993	-.092920	.116332	306.989448
64.75	.046036	-.107383	.117073	293.474928
65.00	.020469	-.115602	.117401	280.041099
65.25	-.006872	-.117089	.117291	266.641264
65.50	-.033687	-.111776	.116742	253.228313
65.75	-.058314	-.100016	.115774	239.755591
66.00	-.079234	-.082561	.114431	226.177815
66.25	-.095164	-.060515	.112775	212.452299
66.50	-.105132	-.035260	.110887	198.540685
66.75	-.109544	-.008374	.108866	184.411332
67.00	-.108212	.018471	.106821	170.042399
67.25	-.095363	.043512	.104867	155.425411
67.50	-.079647	.065496	.103118	140.568756
67.75	-.059046	.082779	.101690	125.500207
68.00	-.034062	.094409	.100640	110.267310
68.25	-.004607	.099545	.100056	94.934680
68.50	.014982	.094306	.099955	79.577969
68.75	.043546	.090393	.100326	64.275388
69.00	.066212	.076433	.101124	49.098631
69.25	.084681	.057345	.102271	34.105314
69.50	.097823	.034324	.103672	19.334392
69.75	.104846	.008813	.105216	4.804932
70.00	.105331	-.017593	.106790	350.517605
70.25	.099273	-.043252	.108286	336.457798
70.50	.087071	-.066572	.109604	322.599240
70.75	.069504	-.086114	.110663	308.907526
71.00	.047981	-.100676	.111396	295.342737
71.25	.022972	-.109370	.111757	281.841772
71.50	-.003091	-.111678	.111720	268.419785
71.75	-.029053	-.107475	.111261	254.971320
72.00	-.052754	-.097044	.110456	241.471238
72.25	-.073299	-.081052	.109280	227.975658
72.50	-.089220	-.060510	.107810	214.143203
72.75	-.099580	-.036706	.106114	200.236542
73.00	-.103597	-.011127	.104292	186.124718
73.25	-.101380	.014634	.102431	171.785436
73.50	-.092762	.034981	.100638	157.210841

<u>T²</u>	<u>Real F</u>	<u>Imag F</u>	<u> F </u>	<u>Arg F</u> <u>(degrees)</u>
73.75	-.078459	.060409	.099020	142.405780
74.00	-.059319	.077598	.097674	127.395164
74.25	-.036554	.089499	.096680	112.222016
74.50	-.011521	.095392	.096097	96.945738
74.75	.013956	.094933	.095953	81.636851
75.00	.038573	.088172	.096243	66.369366
75.25	.060719	.075553	.096928	51.212380
75.50	.079015	.057878	.097945	36.222770
75.75	.092342	.036264	.099207	21.440451
76.00	.099889	.012064	.100615	6.886687
76.25	.101208	-.013207	.102067	352.565034
76.50	.096237	-.037479	.103460	338.463965
76.75	.085306	-.060713	.104705	324.560186
77.00	.069111	-.080004	.105721	310.821887
77.25	.048673	-.094664	.106445	297.211508
77.50	.025280	-.103798	.106832	283.687906
77.75	.000388	-.106854	.106855	270.207939
78.00	-.024452	-.103663	.106507	256.727666
78.25	-.047698	-.094439	.105801	243.203314
78.50	-.067912	-.079775	.104767	229.592261
78.75	-.083850	-.060595	.103454	215.854206
79.00	-.094536	-.034104	.101927	201.952736
79.25	-.099324	-.013707	.100265	187.857407
79.50	-.097934	.011078	.098558	173.546322
79.75	-.090472	.034712	.096903	159.009463
80.00	-.077421	.055733	.095395	144.251113

$$R_1 = \frac{1}{\cos \frac{\pi}{n} - 1} ,$$

$$R_2 = \frac{1}{\cos \frac{\pi}{n} - \cos \frac{2(\alpha - \theta)}{n}} ,$$

$$R_3 = \frac{1}{\cos \frac{\pi}{n} - \cos \frac{2(\alpha + \theta)}{n}} ,$$

$$R_4 = \frac{1}{\cos \frac{\pi}{n} - \cos \frac{2(\frac{3}{2}\pi - \theta)}{n}} ,$$

$$R_5 = \frac{1}{\cos \frac{\pi}{n} - \cos \frac{2(\pi/2 - \theta)}{n}} ,$$

$$R_6 = \frac{1}{\cos \frac{\pi}{n} - \cos \frac{2(\pi/2 + \theta)}{n}} ,$$

$$R_7 = \frac{1}{\cos \frac{\pi}{n} - \cos \frac{2(\pi - \theta)}{n}} , \quad (A-35)$$

where

θ = aspect angle

α = cone half angle or flare angle

$n = \frac{3}{2} + \frac{1}{n}$, or $1 + \frac{1}{n}$.

Table A-2 contains a list of figures and tables which contain curves and numerical tables of these diffraction coefficients as functions of aspect angle. The diffraction coefficients contain poles at certain values of aspect. At these poles, results are omitted from both curves and numerical tables for magnitudes of the coefficients which exceed 100.

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TABLE A-2. NUMERICAL EVALUATIONS OF THE DIFFRACTION COEFFICIENTS
(R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , and R_7)

Parameters		Plots	Numerical Tables	Pages
α (deg)	n	(Figures)	(Tables)	
0	1	A-2	A-3	24, 25
0	$\frac{3}{2}$	A-8	A-9	72, 73
6	$1 + \frac{\alpha}{\pi}$	A-3	A-4	32, 33
6	$\frac{3}{2} + \frac{\alpha}{\pi}$	A-9	A-10	80, 81
8	$1 + \frac{\alpha}{\pi}$	A-4	A-5	40, 41
8	$\frac{3}{2} + \frac{\alpha}{\pi}$	A-10	A-11	88, 89
10	$1 + \frac{\alpha}{\pi}$	A-5	A-6	48, 49
10	$\frac{3}{2} + \frac{\alpha}{\pi}$	A-11	A-12	96, 97
12	$1 + \frac{\alpha}{\pi}$	A-6	A-7	56, 57
12	$\frac{3}{2} + \frac{\alpha}{\pi}$	A-12	A-13	104, 105
15	$1 + \frac{\alpha}{\pi}$	A-7	A-8	64, 65
15	$\frac{3}{2} + \frac{\alpha}{\pi}$	A-13	A-14	112, 113

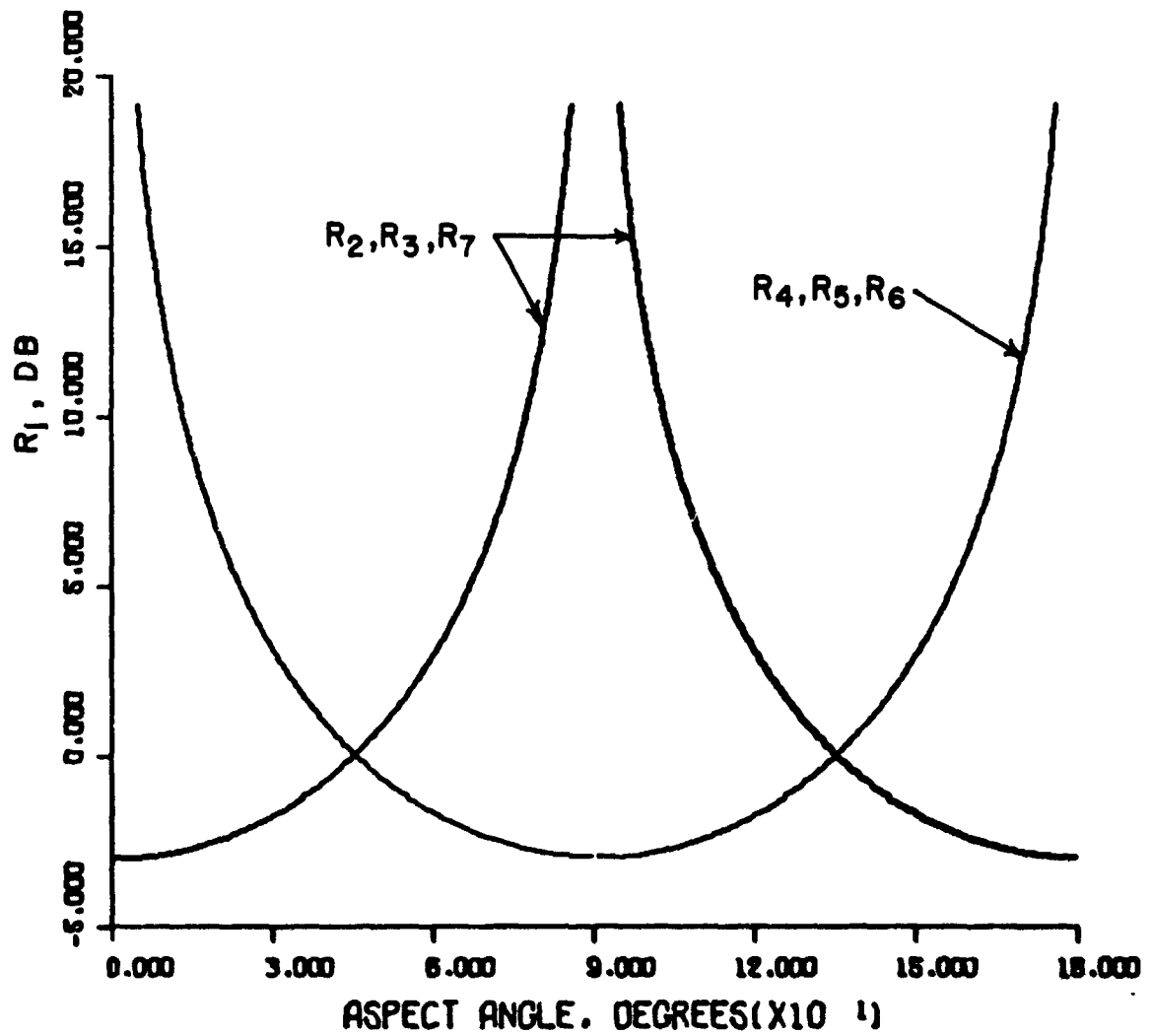


FIGURE A-2. DIFFRACTION COEFFICIENTS
 ($\gamma = 0$ deg, $n = 1$, $R_1 = -0.50$)

TABLE A-3. DIFFRACTION COEFFICIENTS
 $(\alpha = 0 \text{ deg, } n = 1, R_1 = -0.50)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.500038	-.500038				-.500038
1.00	-.500152	-.500152				-.500152
1.50	-.500343	-.500343				-.500343
2.00	-.500610	-.500610				-.500610
2.50	-.500953	-.500953				-.500953
3.00	-.501373	-.501373				-.501373
3.50	-.501870	-.501870				-.501870
4.00	-.502445	-.502445				-.502445
4.50	-.503097	-.503097	-81.223819	-81.223819	-81.223819	-.503097
5.00	-.503827	-.503827	-65.823048	-65.823048	-65.823048	-.503827
5.50	-.504636	-.504636	-54.428236	-54.428236	-54.428236	-.504636
6.00	-.505523	-.505523	-45.761565	-45.761565	-45.761565	-.505523
6.50	-.506491	-.506491	-39.016876	-39.016876	-39.016876	-.506491
7.00	-.507538	-.507538	-33.665189	-33.665189	-33.665189	-.507538
7.50	-.508666	-.508666	-29.347740	-29.347740	-29.347740	-.508666
8.00	-.509876	-.509876	-25.814243	-25.814243	-25.814243	-.509876
8.50	-.511168	-.511168	-22.885786	-22.885786	-22.885786	-.511168
9.00	-.512543	-.512543	-20.431729	-20.431729	-20.431729	-.512543
9.50	-.514002	-.514002	-18.354880	-18.354880	-18.354880	-.514002
10.00	-.515546	-.515546	-16.581719	-16.581719	-16.581719	-.515546
10.50	-.517175	-.517175	-15.055803	-15.055803	-15.055803	-.517175
11.00	-.518892	-.518892	-13.733218	-13.733218	-13.733218	-.518892
11.50	-.520696	-.520696	-12.579384	-12.579384	-12.579384	-.520696
12.00	-.522590	-.522590	-11.566772	-11.566772	-11.566772	-.522590
12.50	-.524574	-.524574	-10.673246	-10.673246	-10.673246	-.524574
13.00	-.526650	-.526650	-9.880842	-9.880842	-9.880842	-.526650
13.50	-.528819	-.528819	-9.174861	-9.174861	-9.174861	-.528819
14.00	-.531082	-.531082	-8.543182	-8.543182	-8.543182	-.531082
14.50	-.533442	-.533442	-7.975735	-7.975735	-7.975735	-.533442
15.00	-.535898	-.535898	-7.464102	-7.464102	-7.464102	-.535898
15.50	-.538454	-.538454	-7.001198	-7.001198	-7.001198	-.538454
16.00	-.541111	-.541111	-6.581030	-6.581030	-6.581030	-.541111
16.50	-.543871	-.543871	-6.198497	-6.198497	-6.198497	-.543871
17.00	-.546736	-.546736	-5.849238	-5.849238	-5.849238	-.546736
17.50	-.549707	-.549707	-5.529507	-5.529507	-5.529507	-.549707
18.00	-.552786	-.552786	-5.236068	-5.236068	-5.236068	-.552786
18.50	-.555977	-.555977	-4.966119	-4.966119	-4.966119	-.555977
19.00	-.559281	-.559281	-4.717220	-4.717220	-4.717220	-.559281
19.50	-.562700	-.562700	-4.487242	-4.487242	-4.487242	-.562700
20.00	-.566237	-.566237	-4.274316	-4.274316	-4.274316	-.566237
20.50	-.569895	-.569895	-4.076800	-4.076800	-4.076800	-.569895
21.00	-.573676	-.573676	-3.893245	-3.893245	-3.893245	-.573676
21.50	-.577583	-.577583	-3.722367	-3.722367	-3.722367	-.577583
22.00	-.581619	-.581619	-3.563027	-3.563027	-3.563027	-.581619
22.50	-.585786	-.585786	-3.414214	-3.414214	-3.414214	-.585786
23.00	-.590089	-.590089	-3.275020	-3.275020	-3.275020	-.590089
23.50	-.594531	-.594531	-3.144638	-3.144638	-3.144638	-.594531
24.00	-.599114	-.599114	-3.022341	-3.022341	-3.022341	-.599114
24.50	-.603843	-.603843	-2.907476	-2.907476	-2.907476	-.603843
25.00	-.608721	-.608721	-2.799455	-2.799455	-2.799455	-.608721
25.50	-.613753	-.613753	-2.697748	-2.697748	-2.697748	-.613753
26.00	-.618942	-.618942	-2.601873	-2.601873	-2.601873	-.618942
26.50	-.624292	-.624292	-2.511396	-2.511396	-2.511396	-.624292
27.00	-.629808	-.629808	-2.425920	-2.425920	-2.425920	-.629808

θ	R_2	R_3	R_4	R_5	R_6	R_7
27.50	-.635495	-.635495	-2.345086	-2.345086	-2.345086	-.635495
28.00	-.641357	-.641357	-2.268566	-2.268566	-2.268566	-.641357
28.50	-.647400	-.647400	-2.196060	-2.196060	-2.196060	-.647400
29.00	-.653629	-.653629	-2.127294	-2.127294	-2.127294	-.653629
29.50	-.660049	-.660049	-2.062018	-2.062018	-2.062018	-.660049
30.00	-.666667	-.666667	-2.000000	-2.000000	-2.000000	-.666667
30.50	-.673487	-.673487	-1.941030	-1.941030	-1.941030	-.673487
31.00	-.680517	-.680517	-1.884913	-1.884913	-1.884913	-.680517
31.50	-.687762	-.687762	-1.831470	-1.831470	-1.831470	-.687762
32.00	-.695231	-.695231	-1.780535	-1.780535	-1.780535	-.695231
32.50	-.702929	-.702929	-1.731956	-1.731956	-1.731956	-.702929
33.00	-.710865	-.710865	-1.685592	-1.685592	-1.685592	-.710865
33.50	-.719046	-.719046	-1.641311	-1.641311	-1.641311	-.719046
34.00	-.727481	-.727481	-1.598994	-1.598994	-1.598994	-.727481
34.50	-.736178	-.736178	-1.558526	-1.558526	-1.558526	-.736178
35.00	-.745145	-.745145	-1.519803	-1.519803	-1.519803	-.745145
35.50	-.754394	-.754394	-1.482730	-1.482730	-1.482730	-.754394
36.00	-.763932	-.763932	-1.447214	-1.447214	-1.447214	-.763932
36.50	-.773771	-.773771	-1.413171	-1.413171	-1.413171	-.773771
37.00	-.783922	-.783922	-1.380524	-1.380524	-1.380524	-.783922
37.50	-.794395	-.794395	-1.349198	-1.349198	-1.349198	-.794395
38.00	-.805204	-.805204	-1.319125	-1.319125	-1.319125	-.805204
38.50	-.816359	-.816359	-1.290241	-1.290241	-1.290241	-.816359
39.00	-.827875	-.827875	-1.262485	-1.262485	-1.262485	-.827875
39.50	-.839765	-.839765	-1.235802	-1.235802	-1.235802	-.839765
40.00	-.852044	-.852044	-1.210138	-1.210138	-1.210138	-.852044
40.50	-.864727	-.864727	-1.185444	-1.185444	-1.185444	-.864727
41.00	-.877830	-.877830	-1.161674	-1.161674	-1.161674	-.877830
41.50	-.891369	-.891369	-1.138783	-1.138783	-1.138783	-.891369
42.00	-.905364	-.905364	-1.116730	-1.116730	-1.116730	-.905364
42.50	-.919831	-.919831	-1.095477	-1.095477	-1.095477	-.919831
43.00	-.934792	-.934792	-1.074987	-1.074987	-1.074987	-.934792
43.50	-.950267	-.950267	-1.055226	-1.055226	-1.055226	-.950267
44.00	-.966277	-.966277	-1.036162	-1.036162	-1.036162	-.966277
44.50	-.982847	-.982847	-1.017762	-1.017762	-1.017762	-.982847
45.00	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
45.50	-1.017762	-1.017762	-.982847	-.982847	-.982847	-1.017762
46.00	-1.036162	-1.036162	-.966277	-.966277	-.966277	-1.036162
46.50	-1.055226	-1.055226	-.950267	-.950267	-.950267	-1.055226
47.00	-1.074987	-1.074987	-.934792	-.934792	-.934792	-1.074987
47.50	-1.095477	-1.095477	-.919831	-.919831	-.919831	-1.095477
48.00	-1.116730	-1.116730	-.905364	-.905364	-.905364	-1.116730
48.50	-1.138783	-1.138783	-.891369	-.891369	-.891369	-1.138783
49.00	-1.161674	-1.161674	-.877830	-.877830	-.877830	-1.161674
49.50	-1.185444	-1.185444	-.864727	-.864727	-.864727	-1.185444
50.00	-1.210138	-1.210138	-.852044	-.852044	-.852044	-1.210138
50.50	-1.235802	-1.235802	-.839765	-.839765	-.839765	-1.235802
51.00	-1.262485	-1.262485	-.827875	-.827875	-.827875	-1.262485
51.50	-1.290241	-1.290241	-.816359	-.816359	-.816359	-1.290241
52.00	-1.319125	-1.319125	-.805204	-.805204	-.805204	-1.319125
52.50	-1.349198	-1.349198	-.794395	-.794395	-.794395	-1.349198
53.00	-1.380524	-1.380524	-.783922	-.783922	-.783922	-1.380524
53.50	-1.413171	-1.413171	-.773771	-.773771	-.773771	-1.413171
54.00	-1.447214	-1.447214	-.763932	-.763932	-.763932	-1.447214
54.50	-1.482730	-1.482730	-.754394	-.754394	-.754394	-1.482730
55.00	-1.519803	-1.519803	-.745145	-.745145	-.745145	-1.519803

θ	R_2	R_3	R_4	R_5	R_6	R_7
55.50	-1.558526	-1.558526	-.736178	-.736178	-.736178	-1.558526
56.00	-1.598994	-1.598994	-.727481	-.727481	-.727481	-1.598994
56.50	-1.641311	-1.641311	-.719046	-.719046	-.719046	-1.641311
57.00	-1.685592	-1.685592	-.710865	-.710865	-.710865	-1.685592
57.50	-1.731956	-1.731956	-.702929	-.702929	-.702929	-1.731956
58.00	-1.780535	-1.780535	-.695231	-.695231	-.695231	-1.780535
58.50	-1.831470	-1.831470	-.687762	-.687762	-.687762	-1.831470
59.00	-1.884913	-1.884913	-.680517	-.680517	-.680517	-1.884913
59.50	-1.941030	-1.941030	-.673487	-.673487	-.673487	-1.941030
60.00	-2.000000	-2.000000	-.666667	-.666667	-.666667	-2.000000
60.50	-2.062018	-2.062018	-.660049	-.660049	-.660049	-2.062018
61.00	-2.127294	-2.127294	-.653629	-.653629	-.653629	-2.127294
61.50	-2.196060	-2.196060	-.647400	-.647400	-.647400	-2.196060
62.00	-2.268566	-2.268566	-.641357	-.641357	-.641357	-2.268566
62.50	-2.345086	-2.345086	-.635495	-.635495	-.635495	-2.345086
63.00	-2.425920	-2.425920	-.629808	-.629808	-.629808	-2.425920
63.50	-2.511396	-2.511396	-.624292	-.624292	-.624292	-2.511396
64.00	-2.601873	-2.601873	-.618942	-.618942	-.618942	-2.601873
64.50	-2.697748	-2.697748	-.613753	-.613753	-.613753	-2.697748
65.00	-2.799455	-2.799455	-.608721	-.608721	-.608721	-2.799455
65.50	-2.907476	-2.907476	-.603843	-.603843	-.603843	-2.907476
66.00	-3.022341	-3.022341	-.599114	-.599114	-.599114	-3.022341
66.50	-3.144638	-3.144638	-.594531	-.594531	-.594531	-3.144638
67.00	-3.275020	-3.275020	-.590089	-.590089	-.590089	-3.275020
67.50	-3.414214	-3.414214	-.585786	-.585786	-.585786	-3.414214
68.00	-3.563027	-3.563027	-.581619	-.581619	-.581619	-3.563027
68.50	-3.722367	-3.722367	-.577583	-.577583	-.577583	-3.722367
69.00	-3.893245	-3.893245	-.573676	-.573676	-.573676	-3.893245
69.50	-4.076800	-4.076800	-.569895	-.569895	-.569895	-4.076800
70.00	-4.274316	-4.274316	-.566237	-.566237	-.566237	-4.274316
70.50	-4.487242	-4.487242	-.562700	-.562700	-.562700	-4.487242
71.00	-4.717220	-4.717220	-.559291	-.559291	-.559291	-4.717220
71.50	-4.966119	-4.966119	-.555977	-.555977	-.555977	-4.966119
72.00	-5.236068	-5.236068	-.552786	-.552786	-.552786	-5.236068
72.50	-5.529507	-5.529507	-.549707	-.549707	-.549707	-5.529507
73.00	-5.847238	-5.847238	-.546736	-.546736	-.546736	-5.847238
73.50	-6.190497	-6.190497	-.543871	-.543871	-.543871	-6.190497
74.00	-6.561030	-6.561030	-.541111	-.541111	-.541111	-6.561030
74.50	-7.001198	-7.001198	-.538454	-.538454	-.538454	-7.001198
75.00	-7.466402	-7.466402	-.535898	-.535898	-.535898	-7.466402
75.50	-7.975735	-7.975735	-.533442	-.533442	-.533442	-7.975735
76.00	-8.543182	-8.543182	-.531087	-.531087	-.531087	-8.543182
76.50	-9.174861	-9.174861	-.528819	-.528819	-.528819	-9.174861
77.00	-9.880842	-9.880842	-.526650	-.526650	-.526650	-9.880842
77.50	-10.673246	-10.673246	-.524574	-.524574	-.524574	-10.673246
78.00	-11.566772	-11.566772	-.522590	-.522590	-.522590	-11.566772
78.50	-12.574394	-12.574394	-.520696	-.520696	-.520696	-12.574394
79.00	-13.733218	-13.733218	-.518892	-.518892	-.518892	-13.733218
79.50	-15.055803	-15.055803	-.517175	-.517175	-.517175	-15.055803
80.00	-16.558174	-16.558174	-.515546	-.515546	-.515546	-16.558174
80.50	-18.356880	-18.356880	-.514002	-.514002	-.514002	-18.356880
81.00	-20.431729	-20.431729	-.512543	-.512543	-.512543	-20.431729
81.50	-22.895796	-22.895796	-.511164	-.511164	-.511164	-22.895796
82.00	-25.741243	-25.741243	-.509876	-.509876	-.509876	-25.741243
82.50	-28.987740	-28.987740	-.508666	-.508666	-.508666	-28.987740
83.00	-32.665199	-32.665199	-.507538	-.507538	-.507538	-32.665199

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
83.50	-39.016876	-39.016876	-.506491	-.506491	-.506491	-39.016876
84.00	-45.761565	-45.761565	-.505523	-.505523	-.505523	-45.761565
84.50	-54.428236	-54.428236	-.504636	-.504636	-.504636	-54.428236
85.00	-65.823048	-65.823048	-.503827	-.503827	-.503827	-65.823048
85.50	-81.223819	-81.223819	-.503097	-.503097	-.503097	-81.223819
86.00			-.502445	-.502445	-.502445	
86.50			-.501870	-.501870	-.501870	
87.00			-.501373	-.501373	-.501373	
87.50			-.500953	-.500953	-.500953	
88.00			-.500610	-.500610	-.500610	
88.50			-.500343	-.500343	-.500343	
89.00			-.500152	-.500152	-.500152	
89.50			-.500038	-.500038	-.500038	
90.00						
90.50			-.500038	-.500038	-.500038	
91.00			-.500152	-.500152	-.500152	
91.50			-.500343	-.500343	-.500343	
92.00			-.500610	-.500610	-.500610	
92.50			-.500953	-.500953	-.500953	
93.00			-.501373	-.501373	-.501373	
93.50			-.501870	-.501870	-.501870	
94.00			-.502445	-.502445	-.502445	
94.50	-81.223819	-81.223819	-.503097	-.503097	-.503097	-81.223819
95.00	-65.823048	-65.823048	-.503827	-.503827	-.503827	-65.823048
95.50	-54.428236	-54.428236	-.504636	-.504636	-.504636	-54.428236
96.00	-45.761565	-45.761565	-.505523	-.505523	-.505523	-45.761565
96.50	-39.016876	-39.016876	-.506491	-.506491	-.506491	-39.016876
97.00	-33.665189	-33.665189	-.507538	-.507538	-.507538	-33.665189
97.50	-29.347740	-29.347740	-.508666	-.508666	-.508666	-29.347740
98.00	-25.814243	-25.814243	-.509876	-.509876	-.509876	-25.814243
98.50	-22.885786	-22.885786	-.511168	-.511168	-.511168	-22.885786
99.00	-20.431729	-20.431729	-.512543	-.512543	-.512543	-20.431729
99.50	-18.354880	-18.354880	-.514002	-.514002	-.514002	-18.354880
100.00	-16.581719	-16.581719	-.515546	-.515546	-.515546	-16.581719
100.50	-15.055803	-15.055803	-.517175	-.517175	-.517175	-15.055803
101.00	-13.733218	-13.733218	-.518892	-.518892	-.518892	-13.733218
101.50	-12.579384	-12.579384	-.520696	-.520696	-.520696	-12.579384
102.00	-11.566772	-11.566772	-.522590	-.522590	-.522590	-11.566772
102.50	-10.673246	-10.673246	-.524574	-.524574	-.524574	-10.673246
103.00	-9.888842	-9.888842	-.526650	-.526650	-.526650	-9.888842
103.50	-9.174861	-9.174861	-.528819	-.528819	-.528819	-9.174861
104.00	-8.543182	-8.543182	-.531082	-.531082	-.531082	-8.543182
104.50	-7.975735	-7.975735	-.533442	-.533442	-.533442	-7.975735
105.00	-7.464102	-7.464102	-.535898	-.535898	-.535898	-7.464102
105.50	-7.001198	-7.001198	-.538454	-.538454	-.538454	-7.001198
106.00	-6.581030	-6.581030	-.541111	-.541111	-.541111	-6.581030
106.50	-6.194497	-6.194497	-.543871	-.543871	-.543871	-6.194497
107.00	-5.849238	-5.849238	-.546736	-.546736	-.546736	-5.849238
107.50	-5.529507	-5.529507	-.549707	-.549707	-.549707	-5.529507
108.00	-5.230064	-5.230064	-.552786	-.552786	-.552786	-5.230064
108.50	-4.946119	-4.946119	-.555977	-.555977	-.555977	-4.946119
109.00	-4.671220	-4.671220	-.559281	-.559281	-.559281	-4.671220
109.50	-4.404242	-4.404242	-.562700	-.562700	-.562700	-4.404242
110.00	-4.274315	-4.274315	-.566237	-.566237	-.566237	-4.274315
110.50	-4.174400	-4.174400	-.569895	-.569895	-.569895	-4.174400
111.00	-3.893245	-3.893245	-.573676	-.573676	-.573676	-3.893245

<u>θ</u>	<u>R_0</u>	<u>R_0</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
111.50	-3.722367	-3.722367	-.577583	-.577583	-.577583	-3.722367
112.00	-3.563027	-3.563027	-.581619	-.581619	-.581619	-3.563027
112.50	-3.414214	-3.414214	-.585786	-.585786	-.585786	-3.414214
113.00	-3.275020	-3.275020	-.590089	-.590089	-.590089	-3.275020
113.50	-3.144638	-3.144638	-.594531	-.594531	-.594531	-3.144638
114.00	-3.022341	-3.022341	-.599114	-.599114	-.599114	-3.022341
114.50	-2.907475	-2.907476	-.603843	-.603843	-.603843	-2.907476
115.00	-2.799455	-2.799455	-.608721	-.608721	-.608721	-2.799455
115.50	-2.697748	-2.697748	-.613753	-.613753	-.613753	-2.697748
116.00	-2.601873	-2.601873	-.618942	-.618942	-.618942	-2.601873
116.50	-2.511396	-2.511396	-.624292	-.624292	-.624292	-2.511396
117.00	-2.425920	-2.425920	-.629808	-.629808	-.629808	-2.425920
117.50	-2.345086	-2.345086	-.635495	-.635495	-.635495	-2.345086
118.00	-2.268566	-2.268566	-.641357	-.641357	-.641357	-2.268566
118.50	-2.196060	-2.196060	-.647400	-.647400	-.647400	-2.196060
119.00	-2.127294	-2.127294	-.653629	-.653629	-.653629	-2.127294
119.50	-2.062018	-2.062018	-.660049	-.660049	-.660049	-2.062018
120.00	-2.000000	-2.000000	-.666667	-.666667	-.666667	-2.000000
120.50	-1.941030	-1.941030	-.673487	-.673487	-.673487	-1.941030
121.00	-1.884913	-1.884913	-.680517	-.680517	-.680517	-1.884913
121.50	-1.831470	-1.831470	-.687762	-.687762	-.687762	-1.831470
122.00	-1.780535	-1.780535	-.695231	-.695231	-.695231	-1.780535
122.50	-1.731456	-1.731456	-.702929	-.702929	-.702929	-1.731456
123.00	-1.685592	-1.685592	-.710865	-.710865	-.710865	-1.685592
123.50	-1.641311	-1.641311	-.719046	-.719046	-.719046	-1.641311
124.00	-1.598994	-1.598994	-.727481	-.727481	-.727481	-1.598994
124.50	-1.558526	-1.558526	-.736179	-.736179	-.736179	-1.558526
125.00	-1.519803	-1.519803	-.745145	-.745145	-.745145	-1.519803
125.50	-1.482730	-1.482730	-.754394	-.754394	-.754394	-1.482730
126.00	-1.447214	-1.447214	-.763932	-.763932	-.763932	-1.447214
126.50	-1.413171	-1.413171	-.773771	-.773771	-.773771	-1.413171
127.00	-1.380524	-1.380524	-.783922	-.783922	-.783922	-1.380524
127.50	-1.349198	-1.349198	-.794395	-.794395	-.794395	-1.349198
128.00	-1.319125	-1.319125	-.805204	-.805204	-.805204	-1.319125
128.50	-1.290241	-1.290241	-.816359	-.816359	-.816359	-1.290241
129.00	-1.262485	-1.262485	-.827875	-.827875	-.827875	-1.262485
129.50	-1.235802	-1.235802	-.839765	-.839765	-.839765	-1.235802
130.00	-1.210136	-1.210136	-.852044	-.852044	-.852044	-1.210136
130.50	-1.185444	-1.185444	-.864727	-.864727	-.864727	-1.185444
131.00	-1.161674	-1.161674	-.877830	-.877830	-.877830	-1.161674
131.50	-1.138783	-1.138783	-.891369	-.891369	-.891369	-1.138783
132.00	-1.116730	-1.116730	-.905364	-.905364	-.905364	-1.116730
132.50	-1.095477	-1.095477	-.919831	-.919831	-.919831	-1.095477
133.00	-1.074987	-1.074987	-.934792	-.934792	-.934792	-1.074987
133.50	-1.055226	-1.055226	-.950267	-.950267	-.950267	-1.055226
134.00	-1.036162	-1.036162	-.966277	-.966277	-.966277	-1.036162
134.50	-1.017762	-1.017762	-.982847	-.982847	-.982847	-1.017762
135.00	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
135.50	-.982847	-.982847	-1.017762	-1.017762	-1.017762	-.982847
136.00	-.966277	-.966277	-1.036162	-1.036162	-1.036162	-.966277
136.50	-.950267	-.950267	-1.055226	-1.055226	-1.055226	-.950267
137.00	-.934792	-.934792	-1.074987	-1.074987	-1.074987	-.934792
137.50	-.919831	-.919831	-1.095477	-1.095477	-1.095477	-.919831
138.00	-.905364	-.905364	-1.116730	-1.116730	-1.116730	-.905364
138.50	-.891369	-.891369	-1.138783	-1.138783	-1.138783	-.891369
139.00	-.877830	-.877830	-1.161674	-1.161674	-1.161674	-.877830

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<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
139.50	-.864727	-.864727	-1.185444	-1.185444	-1.185444	-.864727
140.00	-.852044	-.852044	-1.210138	-1.210138	-1.210138	-.852044
140.50	-.839765	-.839765	-1.235302	-1.235302	-1.235302	-.839765
141.00	-.827475	-.827475	-1.262485	-1.262485	-1.262485	-.827475
141.50	-.816359	-.816359	-1.290241	-1.290241	-1.290241	-.816359
142.00	-.805204	-.805204	-1.319125	-1.319125	-1.319125	-.805204
142.50	-.794395	-.794395	-1.349198	-1.349198	-1.349198	-.794395
143.00	-.783922	-.783922	-1.380524	-1.380524	-1.380524	-.783922
143.50	-.773771	-.773771	-1.413171	-1.413171	-1.413171	-.773771
144.00	-.763932	-.763932	-1.447214	-1.447214	-1.447214	-.763932
144.50	-.754394	-.754394	-1.482730	-1.482730	-1.482730	-.754394
145.00	-.745145	-.745145	-1.519803	-1.519803	-1.519803	-.745145
145.50	-.736178	-.736178	-1.558526	-1.558526	-1.558526	-.736178
146.00	-.727481	-.727481	-1.598994	-1.598994	-1.598994	-.727481
146.50	-.719046	-.719046	-1.641311	-1.641311	-1.641311	-.719046
147.00	-.710865	-.710865	-1.685592	-1.685592	-1.685592	-.710865
147.50	-.702929	-.702929	-1.731956	-1.731956	-1.731956	-.702929
148.00	-.695231	-.695231	-1.780535	-1.780535	-1.780535	-.695231
148.50	-.687762	-.687762	-1.831470	-1.831470	-1.831470	-.687762
149.00	-.680517	-.680517	-1.884913	-1.884913	-1.884913	-.680517
149.50	-.673487	-.673487	-1.941030	-1.941030	-1.941030	-.673487
150.00	-.666667	-.666667	-2.000000	-2.000000	-2.000000	-.666667
150.50	-.660049	-.660049	-2.062018	-2.062018	-2.062018	-.660049
151.00	-.653629	-.653629	-2.127294	-2.127294	-2.127294	-.653629
151.50	-.647400	-.647400	-2.196060	-2.196060	-2.196060	-.647400
152.00	-.641357	-.641357	-2.268566	-2.268566	-2.268566	-.641357
152.50	-.635495	-.635495	-2.345086	-2.345086	-2.345086	-.635495
153.00	-.629808	-.629808	-2.425920	-2.425920	-2.425920	-.629808
153.50	-.624292	-.624292	-2.511396	-2.511396	-2.511396	-.624292
154.00	-.618942	-.618942	-2.601873	-2.601873	-2.601873	-.618942
154.50	-.613753	-.613753	-2.697748	-2.697748	-2.697748	-.613753
155.00	-.608721	-.608721	-2.799455	-2.799455	-2.799455	-.608721
155.50	-.603843	-.603843	-2.907476	-2.907476	-2.907476	-.603843
156.00	-.599114	-.599114	-3.022341	-3.022341	-3.022341	-.599114
156.50	-.594531	-.594531	-3.144638	-3.144638	-3.144638	-.594531
157.00	-.590089	-.590089	-3.275020	-3.275020	-3.275020	-.590089
157.50	-.585780	-.585780	-3.414214	-3.414214	-3.414214	-.585780
158.00	-.581619	-.581619	-3.563027	-3.563027	-3.563027	-.581619
158.50	-.577583	-.577583	-3.722367	-3.722367	-3.722367	-.577583
159.00	-.573676	-.573676	-3.893245	-3.893245	-3.893245	-.573676
159.50	-.569895	-.569895	-4.076800	-4.076800	-4.076800	-.569895
160.00	-.566237	-.566237	-4.274316	-4.274316	-4.274316	-.566237
160.50	-.562700	-.562700	-4.487242	-4.487242	-4.487242	-.562700
161.00	-.559281	-.559281	-4.717220	-4.717220	-4.717220	-.559281
161.50	-.555977	-.555977	-4.966119	-4.966119	-4.966119	-.555977
162.00	-.552786	-.552786	-5.234068	-5.234068	-5.234068	-.552786
162.50	-.549707	-.549707	-5.524507	-5.524507	-5.524507	-.549707
163.00	-.546736	-.546736	-5.849238	-5.849238	-5.849238	-.546736
163.50	-.543871	-.543871	-6.194497	-6.194497	-6.194497	-.543871
164.00	-.541111	-.541111	-6.561030	-6.561030	-6.561030	-.541111
164.50	-.538458	-.538458	-6.951198	-6.951198	-6.951198	-.538458
165.00	-.535908	-.535908	-7.366102	-7.366102	-7.366102	-.535908
165.50	-.533462	-.533462	-7.807535	-7.807535	-7.807535	-.533462
166.00	-.531022	-.531022	-8.286382	-8.286382	-8.286382	-.531022
166.50	-.528694	-.528694	-8.804861	-8.804861	-8.804861	-.528694
167.00	-.526473	-.526473	-9.369062	-9.369062	-9.369062	-.526473

<u>U</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
167.50	-.524574	-.524574	-10.673246	-10.673246	-10.673246	-.524574
168.00	-.522590	-.522590	-11.566772	-11.566772	-11.566772	-.522590
168.50	-.520696	-.520696	-12.579384	-12.579384	-12.579384	-.520696
169.00	-.518892	-.518892	-13.733218	-13.733218	-13.733218	-.518892
169.50	-.517175	-.517175	-15.055803	-15.055803	-15.055803	-.517175
170.00	-.515546	-.515546	-16.581719	-16.581719	-16.581719	-.515546
170.50	-.514002	-.514002	-18.354880	-18.354880	-18.354880	-.514002
171.00	-.512543	-.512543	-20.431729	-20.431729	-20.431729	-.512543
171.50	-.511168	-.511168	-22.885786	-22.885786	-22.885786	-.511168
172.00	-.509876	-.509876	-25.814243	-25.814243	-25.814243	-.509876
172.50	-.508666	-.508666	-29.347740	-29.347740	-29.347740	-.508666
173.00	-.507538	-.507538	-33.665189	-33.665189	-33.665189	-.507538
173.50	-.506491	-.506491	-39.016876	-39.016876	-39.016876	-.506491
174.00	-.505523	-.505523	-45.761565	-45.761565	-45.761565	-.505523
174.50	-.504636	-.504636	-54.428236	-54.428236	-54.428236	-.504636
175.00	-.503827	-.503827	-65.823048	-65.823048	-65.823048	-.503827
175.50	-.503097	-.503097	-81.223819	-81.223819	-81.223819	-.503097
176.00	-.502445	-.502445				-.502445
176.50	-.501870	-.501870				-.501870
177.00	-.501373	-.501373				-.501373
177.50	-.500953	-.500953				-.500953
178.00	-.500610	-.500610				-.500610
178.50	-.500343	-.500343				-.500343
179.00	-.500152	-.500152				-.500152
179.50	-.500038	-.500038				-.500038
180.00						

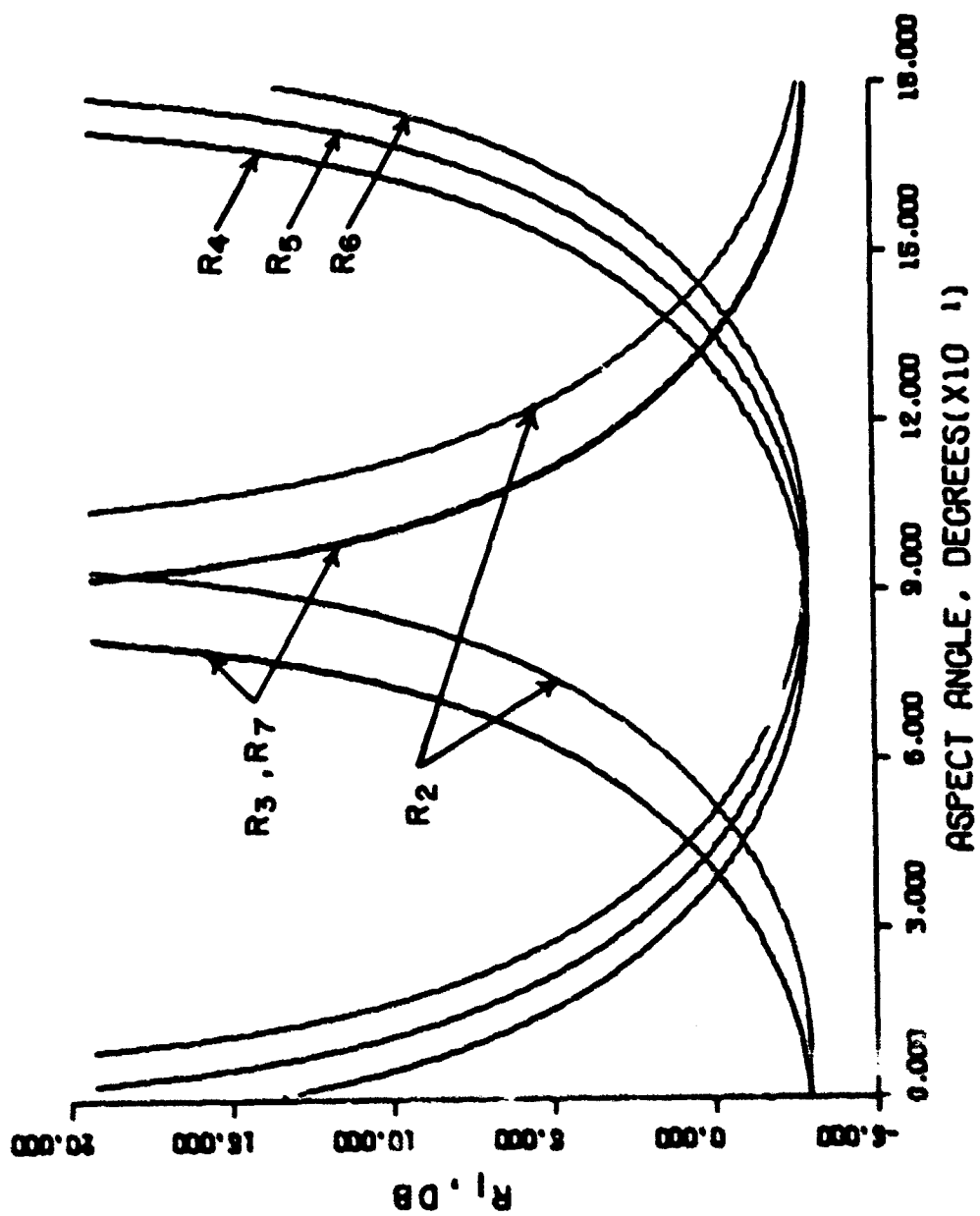


FIGURE A-3. DIFFRACTION COEFFICIENTS

($\alpha = 6$ deg, $n = 1 + \alpha/\pi$, $R_1 = -0.501286$)

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TABLE A-4. DIFFRACTION COEFFICIENTS
 $(\alpha = 6 \text{ deg}, n = 1 + \alpha/\pi, R_1 = -0.501286)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.505648	-.507393	-21.775936			-.507393
1.00	-.504388	-.508378	-19.460877			-.508378
1.50	-.504201	-.509438	-17.507864			-.509438
2.00	-.503587	-.510575	-15.843654			-.510575
2.50	-.503046	-.511789	-14.412934	-82.786443		-.511789
3.00	-.502579	-.513081	-13.173233	-65.191674		-.513081
3.50	-.502183	-.514452	-12.091452	-52.969112		-.514452
4.00	-.501860	-.515902	-11.141463	-44.058885		-.515902
4.50	-.501609	-.517432	-10.302398	-37.324290		-.517432
5.00	-.501429	-.519043	-9.557409	-32.088637		-.519043
5.50	-.501322	-.520737	-8.892766	-27.925102		-.520737
6.00	-.501286	-.522513	-8.297192	-24.551887		-.522513
6.50	-.501322	-.524374	-7.761329	-21.775936		-.524374
7.00	-.501429	-.526320	-7.277375	-19.460877		-.526320
7.50	-.501609	-.528353	-6.838773	-17.507864		-.528353
8.00	-.501860	-.530474	-6.439978	-15.843654		-.530474
8.50	-.502183	-.532683	-6.076274	-14.412934	-82.786443	-.532683
9.00	-.502579	-.534984	-5.743631	-13.173233	-65.191674	-.534984
9.50	-.503046	-.537376	-5.438584	-12.091452	-52.969112	-.537376
10.00	-.503587	-.539862	-5.158143	-11.141463	-44.058885	-.539862
10.50	-.504201	-.542442	-4.899713	-10.302398	-37.324290	-.542442
11.00	-.504888	-.545120	-4.661037	-9.557409	-32.088637	-.545120
11.50	-.505648	-.547896	-4.440141	-8.892766	-27.925102	-.547896
12.00	-.506483	-.550772	-4.235293	-8.297192	-24.551887	-.550772
12.50	-.507393	-.553751	-4.044968	-7.761329	-21.775936	-.553751
13.00	-.508378	-.556833	-3.867819	-7.277375	-19.460877	-.556833
13.50	-.509438	-.560022	-3.702654	-6.838773	-17.507864	-.560022
14.00	-.510575	-.563319	-3.548412	-6.439978	-15.843654	-.563319
14.50	-.511789	-.566726	-3.404148	-6.076274	-14.412934	-.566726
15.00	-.513081	-.570247	-3.269016	-5.743631	-13.173233	-.570247
15.50	-.514452	-.573882	-3.142262	-5.438584	-12.091452	-.573882
16.00	-.515902	-.577636	-3.023206	-5.158143	-11.141463	-.577636
16.50	-.517432	-.581510	-2.911235	-4.899713	-10.302398	-.581510
17.00	-.519043	-.585507	-2.805799	-4.661037	-9.557409	-.585507
17.50	-.520737	-.589630	-2.706398	-4.440141	-8.892766	-.589630
18.00	-.522513	-.593882	-2.612580	-4.235293	-8.297192	-.593882
18.50	-.524374	-.598266	-2.523937	-4.044968	-7.761329	-.598266
19.00	-.526320	-.602786	-2.440094	-3.867819	-7.277375	-.602786
19.50	-.528353	-.607444	-2.360711	-3.702654	-6.838773	-.607444
20.00	-.530474	-.612245	-2.285480	-3.548412	-6.439978	-.612245
20.50	-.532683	-.617191	-2.214116	-3.404148	-6.076274	-.617191
21.00	-.534984	-.622267	-2.146359	-3.269016	-5.743631	-.622267
21.50	-.537376	-.627537	-2.081972	-3.142262	-5.438584	-.627537
22.00	-.539862	-.632944	-2.020735	-3.023206	-5.158143	-.632944
22.50	-.542442	-.638514	-1.962449	-2.911235	-4.899713	-.638514
23.00	-.545120	-.644249	-1.906927	-2.805799	-4.661037	-.644249
23.50	-.547896	-.650157	-1.853999	-2.706398	-4.440141	-.650157
24.00	-.550772	-.656240	-1.803507	-2.612580	-4.235293	-.656240
24.50	-.553751	-.662504	-1.755305	-2.523937	-4.044968	-.662504
25.00	-.556833	-.668955	-1.709259	-2.440094	-3.867819	-.668955
25.50	-.560022	-.675597	-1.665242	-2.360711	-3.702654	-.675597
26.00	-.563319	-.682438	-1.623138	-2.285480	-3.548412	-.682438
26.50	-.566726	-.689482	-1.582891	-2.214116	-3.404148	-.689482
27.00	-.570247	-.696735	-1.544249	-2.146359	-3.269016	-.696735

<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
27.50	-.573882	-.704207	-1.507269	-2.081972	-3.142262	-.704207
28.00	-.577636	-.711901	-1.471813	-2.020735	-3.023206	-.711901
28.50	-.581510	-.719826	-1.437802	-1.962449	-2.911235	-.719826
29.00	-.585507	-.727988	-1.405158	-1.906927	-2.805799	-.727988
29.50	-.589630	-.736397	-1.373811	-1.853999	-2.706398	-.736397
30.00	-.593882	-.745000	-1.343694	-1.803507	-2.612580	-.745000
30.50	-.598265	-.753985	-1.314747	-1.755305	-2.523937	-.753985
31.00	-.602786	-.763181	-1.286909	-1.709259	-2.440094	-.763181
31.50	-.607444	-.772659	-1.260127	-1.665242	-2.360711	-.772659
32.00	-.612245	-.782427	-1.234350	-1.623138	-2.285480	-.782427
32.50	-.617191	-.792496	-1.209529	-1.582841	-2.214116	-.792496
33.00	-.622287	-.802876	-1.185619	-1.544249	-2.146359	-.802876
33.50	-.627537	-.813580	-1.162577	-1.507269	-2.081972	-.813580
34.00	-.632944	-.824618	-1.140364	-1.471813	-2.020735	-.824618
34.50	-.638514	-.836003	-1.118942	-1.437802	-1.962449	-.836003
35.00	-.644249	-.847748	-1.098276	-1.405158	-1.906927	-.847748
35.50	-.650157	-.859867	-1.078330	-1.373811	-1.853999	-.859867
36.00	-.656240	-.872374	-1.059075	-1.343694	-1.803507	-.872374
36.50	-.662504	-.885284	-1.040480	-1.314747	-1.755305	-.885284
37.00	-.668955	-.898613	-1.022516	-1.286909	-1.709259	-.898613
37.50	-.675597	-.912377	-1.005157	-1.260127	-1.665242	-.912377
38.00	-.682438	-.926595	-.988378	-1.234350	-1.623138	-.926595
38.50	-.689482	-.941284	-.972154	-1.209529	-1.582841	-.941284
39.00	-.696736	-.956463	-.956463	-1.185619	-1.544249	-.956463
39.50	-.704207	-.972154	-.941284	-1.162577	-1.507269	-.972154
40.00	-.711901	-.988378	-.926595	-1.140364	-1.471813	-.988378
40.50	-.719826	-1.005157	-.912377	-1.118942	-1.437802	-1.005157
41.00	-.727988	-1.022516	-.898613	-1.098276	-1.405158	-1.022516
41.50	-.736397	-1.040480	-.885284	-1.078330	-1.373811	-1.040480
42.00	-.745000	-1.059075	-.872374	-1.059075	-1.343694	-1.059075
42.50	-.753985	-1.078330	-.859867	-1.040480	-1.314747	-1.078330
43.00	-.763181	-1.098276	-.847748	-1.022516	-1.286909	-1.098276
43.50	-.772659	-1.118942	-.836003	-1.005157	-1.260127	-1.118942
44.00	-.782427	-1.140364	-.824618	-.988378	-1.234350	-1.140364
44.50	-.792496	-1.162577	-.813580	-.972154	-1.209529	-1.162577
45.00	-.802876	-1.185619	-.802876	-.956463	-1.185619	-1.185619
45.50	-.813580	-1.209529	-.792496	-.941284	-1.162577	-1.209529
46.00	-.824618	-1.234350	-.782427	-.926595	-1.140364	-1.234350
46.50	-.836003	-1.260127	-.772659	-.912377	-1.118942	-1.260127
47.00	-.847748	-1.286909	-.763181	-.898613	-1.098276	-1.286909
47.50	-.859867	-1.314747	-.753985	-.885284	-1.078330	-1.314747
48.00	-.872374	-1.343694	-.745000	-.872374	-1.059075	-1.343694
48.50	-.885284	-1.373811	-.736397	-.859867	-1.040480	-1.373811
49.00	-.898613	-1.405158	-.727988	-.847748	-1.022516	-1.405158
49.50	-.912377	-1.437802	-.719826	-.836003	-1.005157	-1.437802
50.00	-.926595	-1.471813	-.711901	-.824618	-.988378	-1.471813
50.50	-.941284	-1.507269	-.704207	-.813580	-.972154	-1.507269
51.00	-.956463	-1.544249	-.696736	-.802876	-.956463	-1.544249
51.50	-.972154	-1.582841	-.689482	-.792496	-.941284	-1.582841
52.00	-.988378	-1.623138	-.682504	-.782427	-.926595	-1.623138
52.50	-1.005157	-1.665242	-.675597	-.772659	-.912377	-1.665242
53.00	-1.022516	-1.709259	-.668955	-.763181	-.898613	-1.709259
53.50	-1.040480	-1.755305	-.662504	-.753985	-.885284	-1.755305
54.00	-1.059075	-1.803507	-.656240	-.745000	-.872374	-1.803507
54.50	-1.078330	-1.853999	-.650157	-.736397	-.859867	-1.853999
55.00	-1.098276	-1.906927	-.644249	-.727988	-.847748	-1.906927

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
55.50	-1.118942	-1.962445	-.638514	-.719826	-.636003	-1.962449
56.00	-1.140364	-2.020735	-.632944	-.711901	-.824618	-2.020735
56.50	-1.162577	-2.081972	-.627537	-.704207	-.813580	-2.081972
57.00	-1.185619	-2.146359	-.622287	-.696736	-.802876	-2.146359
57.50	-1.209529	-2.214116	-.617191	-.689482	-.792496	-2.214116
58.00	-1.234350	-2.285480	-.612245	-.682438	-.782427	-2.285480
58.50	-1.260127	-2.360711	-.607444	-.675597	-.772659	-2.360711
59.00	-1.286709	-2.440094	-.602786	-.668955	-.763181	-2.440094
59.50	-1.314747	-2.523937	-.598256	-.662504	-.753985	-2.523937
60.00	-1.343694	-2.612580	-.593892	-.656240	-.745060	-2.612580
60.50	-1.373811	-2.706398	-.589530	-.650157	-.736397	-2.706398
61.00	-1.405158	-2.805799	-.585507	-.644249	-.727880	-2.805799
61.50	-1.437802	-2.911235	-.581510	-.638514	-.719826	-2.911235
62.00	-1.471813	-3.023206	-.577636	-.632944	-.711901	-3.023206
62.50	-1.507269	-3.142262	-.573882	-.627537	-.704207	-3.142262
63.00	-1.544249	-3.269016	-.570247	-.622287	-.696736	-3.269016
63.50	-1.582841	-3.404148	-.566726	-.617191	-.689482	-3.404148
64.00	-1.623138	-3.548412	-.563319	-.612245	-.682438	-3.548412
64.50	-1.665242	-3.702654	-.560022	-.607444	-.675597	-3.702654
65.00	-1.709259	-3.867819	-.556833	-.602786	-.668955	-3.867819
65.50	-1.755395	-4.044968	-.553751	-.598266	-.662504	-4.044968
66.00	-1.803507	-4.235293	-.550772	-.593882	-.656240	-4.235293
66.50	-1.853599	-4.440141	-.547896	-.589630	-.650157	-4.440141
67.00	-1.906927	-4.661037	-.545120	-.585507	-.644249	-4.661037
67.50	-1.962449	-4.899713	-.542542	-.581510	-.638514	-4.899713
68.00	-2.020735	-5.158143	-.539862	-.577636	-.632944	-5.158143
68.50	-2.081972	-5.438584	-.537376	-.573882	-.627537	-5.438584
69.00	-2.146359	-5.743631	-.534984	-.570247	-.622287	-5.743631
69.50	-2.214116	-6.076274	-.532583	-.566726	-.617191	-6.076274
70.00	-2.285480	-6.439978	-.530474	-.563319	-.612245	-6.439978
70.50	-2.360711	-6.838773	-.528553	-.560022	-.607444	-6.838773
71.00	-2.440094	-7.277375	-.526320	-.556833	-.602786	-7.277375
71.50	-2.523937	-7.761329	-.524374	-.553751	-.598266	-7.761329
72.00	-2.612580	-8.297192	-.522515	-.550772	-.593882	-8.297192
72.50	-2.706398	-8.892768	-.520737	-.547896	-.589630	-8.892768
73.00	-2.805799	-9.557409	-.519043	-.545120	-.585507	-9.557409
73.50	-2.911235	-10.302398	-.517432	-.542442	-.581510	-10.302398
74.00	-3.023206	-11.141463	-.515902	-.539862	-.577636	-11.141463
74.50	-3.142262	-12.091452	-.514452	-.537376	-.573882	-12.091452
75.00	-3.269016	-13.173233	-.513031	-.534984	-.570247	-13.173233
75.50	-3.404148	-14.412934	-.511739	-.532583	-.566726	-14.412934
76.00	-3.548412	-15.843654	-.510575	-.530474	-.563319	-15.843654
76.50	-3.702654	-17.507864	-.509438	-.528553	-.560022	-17.507864
77.00	-3.867819	-19.440877	-.508378	-.526320	-.556833	-19.440877
77.50	-4.044968	-21.775935	-.507393	-.524374	-.553751	-21.775935
78.00	-4.235293	-24.551847	-.506483	-.522513	-.550772	-24.551847
78.50	-4.440141	-27.925102	-.505648	-.520737	-.547896	-27.925102
79.00	-4.661037	-32.044637	-.504888	-.519043	-.545120	-32.044637
79.50	-4.899713	-37.324290	-.504201	-.517432	-.542442	-37.324290
80.00	-5.158143	-44.058485	-.503587	-.515902	-.539862	-44.058485
80.50	-5.438584	-52.969112	-.503046	-.514452	-.537376	-52.969112
81.00	-5.743631	-65.191674	-.502579	-.513031	-.534984	-65.191674
81.50	-6.076274	-82.786443	-.502183	-.511739	-.532583	-82.786443
82.00	-6.439978		-.501860	-.510575	-.530474	
82.50	-6.838773		-.501609	-.509438	-.528553	
83.00	-7.277375		-.501429	-.508378	-.526320	

<u>Q</u>	<u>R_Q</u>	<u>R_Q</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
83.50	-7.761329		-.501322	-.507393	-.524374	
84.00						
84.50						
85.00	-9.557409		-.501429	-.504888	-.519043	
85.50	-10.302398		-.501609	-.504201	-.517432	
86.00	-11.141463		-.501860	-.503587	-.515902	
86.50	-12.091452		-.502183	-.503046	-.514452	
87.00	-13.173233		-.502579	-.502579	-.513081	
87.50	-14.412934		-.503046	-.502183	-.511789	
88.00	-15.843654		-.503597	-.501860	-.510575	
88.50	-17.507054		-.504201	-.501609	-.509438	
89.00	-19.460877		-.504888	-.501429	-.508378	
89.50	-21.775936		-.505648	-.501322	-.507393	
90.00						
90.50	-27.925102		-.507393	-.501322	-.505648	
91.00	-32.088637		-.508378	-.501429	-.504888	
91.50	-37.324290		-.509438	-.501609	-.504201	
92.00	-44.058885		-.510575	-.501860	-.503587	
92.50	-52.969112	-82.786443	-.511789	-.502183	-.503046	-82.786443
93.00	-65.191674	-65.191674	-.513081	-.502579	-.502579	-65.191674
93.50	-82.786443	-52.969112	-.514452	-.503046	-.502183	-52.969112
94.00		-44.058885	-.515902	-.503587	-.501860	-44.058885
94.50		-37.324290	-.517432	-.504201	-.501609	-37.324290
95.00		-32.088637	-.519043	-.504888	-.501429	-32.088637
95.50						
96.00						
96.50						
97.00		-19.460877	-.526320	-.508378	-.501429	-19.460877
97.50		-17.507864	-.528353	-.509438	-.501609	-17.507864
98.00		-15.843654	-.530474	-.510575	-.501860	-15.843654
98.50		-14.412934	-.532683	-.511789	-.502183	-14.412934
99.00		-13.173233	-.534984	-.513081	-.502579	-13.173233
99.50		-12.091452	-.537376	-.514452	-.503046	-12.091452
100.00		-11.141463	-.539862	-.515902	-.503587	-11.141463
100.50		-10.302398	-.542442	-.517432	-.504201	-10.302398
101.00		-9.557409	-.545120	-.519043	-.504888	-9.557409
101.50		-8.892768	-.547896	-.520737	-.505648	-8.892768
102.00		-8.297192	-.550772	-.522513	-.506483	-8.297192
102.50		-7.761329	-.553751	-.524374	-.507393	-7.761329
103.00		-7.277375	-.556833	-.526320	-.508378	-7.277375
103.50		-6.838773	-.560022	-.528353	-.509438	-6.838773
104.00		-6.439978	-.563319	-.530474	-.510575	-6.439978
104.50	-82.786443	-6.076274	-.566626	-.532683	-.511789	-6.076274
105.00	-65.191674	-5.743631	-.570247	-.534984	-.513081	-5.743631
105.50	-52.969112	-5.438584	-.573882	-.537376	-.514452	-5.438584
106.00	-44.058885	-5.158143	-.577636	-.539862	-.515902	-5.158143
106.50	-37.324290	-4.899713	-.581510	-.542442	-.517432	-4.899713
107.00	-32.088637	-4.661037	-.585507	-.545120	-.519043	-4.661037
107.50	-27.925102	-4.440141	-.589630	-.547896	-.520737	-4.440141
108.00	-24.551847	-4.235293	-.593882	-.550772	-.522513	-4.235293
108.50	-21.775936	-4.044968	-.598266	-.553751	-.524374	-4.044968
109.00	-19.460877	-3.867819	-.602786	-.556833	-.526320	-3.867819
109.50	-17.507864	-3.702654	-.607444	-.560022	-.528353	-3.702654
110.00	-15.843654	-3.548412	-.612245	-.563319	-.530474	-3.548412
110.50	-14.412934	-3.404148	-.617191	-.566626	-.532683	-3.404148
111.00	-13.173233	-3.269016	-.622287	-.570247	-.534984	-3.269016

θ	R_2	R_3	R_4	R_5	R_6	R_7
111.50	-12.091452	-3.142262	-.627537	-.573882	-.537376	-3.142262
112.00	-11.141463	-3.023206	-.632944	-.577636	-.539862	-3.023206
112.50	-10.302398	-2.911235	-.638514	-.581510	-.542442	-2.911235
113.00	-9.557409	-2.805799	-.644249	-.585507	-.545120	-2.805799
113.50	-8.892768	-2.706398	-.650157	-.589430	-.547896	-2.706398
114.00	-8.297192	-2.612580	-.656240	-.593882	-.550772	-2.612580
114.50	-7.761329	-2.523937	-.662504	-.598266	-.553751	-2.523937
115.00	-7.277375	-2.440094	-.668955	-.602786	-.556833	-2.440094
115.50	-6.838713	-2.360711	-.675597	-.607444	-.560022	-2.360711
116.00	-6.439978	-2.285480	-.682438	-.612245	-.563319	-2.285480
116.50	-6.076274	-2.214116	-.689482	-.617191	-.566726	-2.214116
117.00	-5.743631	-2.146359	-.696736	-.622287	-.570247	-2.146359
117.50	-5.438584	-2.081972	-.704207	-.627537	-.573882	-2.081972
118.00	-5.158143	-2.020735	-.711901	-.632944	-.577636	-2.020735
118.50	-4.899713	-1.962449	-.719826	-.638514	-.581510	-1.962449
119.00	-4.661037	-1.906927	-.727988	-.644249	-.585507	-1.906927
119.50	-4.440141	-1.853999	-.736397	-.650157	-.589430	-1.853999
120.00	-4.235293	-1.803507	-.745060	-.656240	-.593882	-1.803507
120.50	-4.044968	-1.755305	-.753985	-.662504	-.598266	-1.755305
121.00	-3.867819	-1.709259	-.763181	-.668955	-.602786	-1.709259
121.50	-3.702654	-1.665242	-.772659	-.675497	-.607444	-1.665242
122.00	-3.548412	-1.623138	-.782427	-.682438	-.612245	-1.623138
122.50	-3.404148	-1.582841	-.792496	-.689482	-.617191	-1.582841
123.00	-3.269016	-1.544249	-.802876	-.696736	-.622287	-1.544249
123.50	-3.142262	-1.507269	-.813580	-.704207	-.627537	-1.507269
124.00	-3.023206	-1.471813	-.824618	-.711901	-.632944	-1.471813
124.50	-2.911235	-1.437802	-.836003	-.719826	-.638514	-1.437802
125.00	-2.805799	-1.405158	-.847748	-.727988	-.644249	-1.405158
125.50	-2.706398	-1.373811	-.859867	-.736397	-.650157	-1.373811
126.00	-2.612580	-1.343694	-.872374	-.745060	-.656240	-1.343694
126.50	-2.523937	-1.314747	-.885284	-.753985	-.662504	-1.314747
127.00	-2.440094	-1.286909	-.898613	-.763181	-.668955	-1.286909
127.50	-2.360711	-1.260127	-.912377	-.772659	-.675497	-1.260127
128.00	-2.285480	-1.234350	-.926595	-.782427	-.682438	-1.234350
128.50	-2.214116	-1.209529	-.941284	-.792496	-.689482	-1.209529
129.00	-2.146359	-1.185619	-.956463	-.802876	-.696736	-1.185619
129.50	-2.081972	-1.162577	-.972154	-.813580	-.704207	-1.162577
130.00	-2.020735	-1.140364	-.988378	-.824618	-.711901	-1.140364
130.50	-1.962449	-1.118942	-1.005157	-.836003	-.719826	-1.118942
131.00	-1.906927	-1.098276	-1.022516	-.847748	-.727988	-1.098276
131.50	-1.853999	-1.078330	-1.040480	-.859867	-.736397	-1.078330
132.00	-1.803507	-1.059075	-1.059075	-.872374	-.745060	-1.059075
132.50	-1.755305	-1.040480	-1.078330	-.885284	-.753985	-1.040480
133.00	-1.709259	-1.022516	-1.098276	-.898613	-.763181	-1.022516
133.50	-1.665242	-1.005157	-1.118942	-.912377	-.772659	-1.005157
134.00	-1.623138	-.988378	-1.140364	-.926595	-.782427	-.988378
134.50	-1.582841	-.972154	-1.162577	-.941284	-.792496	-.972154
135.00	-1.544249	-.956463	-1.185619	-.956463	-.802876	-.956463
135.50	-1.507269	-.941284	-1.209529	-.972154	-.813580	-.941284
136.00	-1.471813	-.926595	-1.234350	-.988378	-.824618	-.926595
136.50	-1.437802	-.912377	-1.260127	-1.005157	-.836003	-.912377
137.00	-1.405158	-.898613	-1.286909	-1.022516	-.847748	-.898613
137.50	-1.373811	-.885284	-1.314747	-1.040480	-.859867	-.885284
138.00	-1.343694	-.872374	-1.343694	-1.059075	-.872374	-.872374
138.50	-1.314747	-.859867	-1.373811	-1.078330	-.885284	-.859867
139.00	-1.286909	-.847748	-1.405158	-1.098276	-.898613	-.847748

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
139.50	-1.260127	-.836003	-1.437802	-1.118942	-.912377	-.836003
140.00	-1.234350	-.824618	-1.471813	-1.140364	-.926595	-.824618
140.50	-1.209529	-.813580	-1.507269	-1.162577	-.941284	-.813580
141.00	-1.185619	-.802876	-1.544249	-1.185619	-.956463	-.802876
141.50	-1.162577	-.792496	-1.582841	-1.209529	-.972154	-.792496
142.00	-1.140364	-.782427	-1.623138	-1.234350	-.988378	-.782427
142.50	-1.118942	-.772659	-1.665242	-1.260127	-1.005157	-.772659
143.00	-1.098276	-.763181	-1.709259	-1.286909	-1.022516	-.763181
143.50	-1.078330	-.753985	-1.755305	-1.314747	-1.040480	-.753985
144.00	-1.059075	-.745060	-1.803507	-1.343694	-1.059075	-.745060
144.50	-1.040480	-.736397	-1.853999	-1.373811	-1.078330	-.736397
145.00	-1.022516	-.727988	-1.906927	-1.405158	-1.098276	-.727988
145.50	-1.005157	-.719826	-1.962449	-1.437802	-1.118942	-.719826
146.00	-.988378	-.711901	-2.020735	-1.471813	-1.140364	-.711901
146.50	-.972154	-.704207	-2.081972	-1.507269	-1.162577	-.704207
147.00	-.956463	-.696736	-2.146359	-1.544249	-1.185619	-.696736
147.50	-.941284	-.689482	-2.214116	-1.582841	-1.209529	-.689482
148.00	-.926595	-.682438	-2.285480	-1.623138	-1.234350	-.682438
148.50	-.912377	-.675597	-2.360711	-1.665242	-1.260127	-.675597
149.00	-.898276	-.668955	-2.440094	-1.709259	-1.286909	-.668955
149.50	-.885284	-.662504	-2.523937	-1.755305	-1.314747	-.662504
150.00	-.872374	-.656240	-2.612580	-1.803507	-1.343694	-.656240
150.50	-.859587	-.650157	-2.706398	-1.853999	-1.373811	-.650157
151.00	-.847148	-.644249	-2.805799	-1.906927	-1.405158	-.644249
151.50	-.836003	-.638514	-2.911235	-1.962449	-1.437802	-.638514
152.00	-.824618	-.632944	-3.023206	-2.020735	-1.471813	-.632944
152.50	-.813580	-.627537	-3.142262	-2.081972	-1.507269	-.627537
153.00	-.802876	-.622287	-3.269016	-2.146359	-1.544249	-.622287
153.50	-.792496	-.617191	-3.404148	-2.214116	-1.582841	-.617191
154.00	-.782427	-.612245	-3.548412	-2.285480	-1.623138	-.612245
154.50	-.772659	-.607444	-3.702654	-2.360711	-1.665242	-.607444
155.00	-.763181	-.602786	-3.867819	-2.440094	-1.709259	-.602786
155.50	-.753985	-.598266	-4.044968	-2.523937	-1.755305	-.598266
156.00	-.745060	-.593992	-4.235293	-2.612580	-1.803507	-.593992
156.50	-.736397	-.589930	-4.440141	-2.706398	-1.853999	-.589930
157.00	-.727988	-.585507	-4.661037	-2.805799	-1.906927	-.585507
157.50	-.719826	-.581510	-4.899713	-2.911235	-1.962449	-.581510
158.00	-.711901	-.577636	-5.159143	-3.023206	-2.020735	-.577636
158.50	-.704207	-.573882	-5.438534	-3.142262	-2.081972	-.573882
159.00	-.696736	-.570247	-5.743531	-3.269016	-2.146359	-.570247
159.50	-.689482	-.566726	-6.076274	-3.404148	-2.214116	-.566726
160.00	-.682438	-.563319	-6.439978	-3.548412	-2.285480	-.563319
160.50	-.675597	-.560022	-6.834773	-3.702654	-2.360711	-.560022
161.00	-.668955	-.556833	-7.277375	-3.867819	-2.440094	-.556833
161.50	-.662504	-.553751	-7.761329	-4.044968	-2.523937	-.553751
162.00	-.656240	-.550772	-8.297192	-4.235293	-2.612580	-.550772
162.50	-.650157	-.547896	-8.892768	-4.440141	-2.706398	-.547896
163.00	-.644249	-.545120	-9.557409	-4.661037	-2.805799	-.545120
163.50	-.638514	-.542442	-10.302398	-4.899713	-2.911235	-.542442
164.00	-.632944	-.539852	-11.141463	-5.159143	-3.023206	-.539852
164.50	-.627537	-.537376	-12.091452	-5.438534	-3.142262	-.537376
165.00	-.622287	-.534994	-13.173233	-5.743531	-3.269016	-.534994
165.50	-.617191	-.532683	-14.412934	-6.076274	-3.404148	-.532683
166.00	-.612245	-.530474	-15.843654	-6.439978	-3.548412	-.530474
166.50	-.607444	-.528333	-17.507864	-6.834773	-3.702654	-.528333
167.00	-.602786	-.526320	-19.460477	-7.277375	-3.867819	-.526320

<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
167.50	-.598266	-.524374	-21.775936	-7.761329	-4.044968	-.524374
168.00	-.593882	-.522513	-24.551887	-8.297192	-4.235293	-.522513
168.50	-.589630	-.520737	-27.925102	-8.892768	-4.440141	-.520737
169.00	-.585507	-.519043	-32.088637	-9.557409	-4.661037	-.519043
169.50	-.581510	-.517432	-37.324290	-10.302398	-4.899713	-.517432
170.00	-.577636	-.515902	-44.058885	-11.141463	-5.158143	-.515902
170.50	-.573882	-.514452	-52.969112	-12.091452	-5.438584	-.514452
171.00	-.570247	-.513081	-65.191674	-13.173233	-5.743631	-.513081
171.50	-.566726	-.511789	-82.786443	-14.412934	-6.076274	-.511789
172.00	-.563319	-.510575		-15.843654	-6.439978	-.510575
172.50	-.560022	-.509438		-17.507864	-6.838773	-.509438
173.00	-.556833	-.508378		-19.460877	-7.271375	-.508378
173.50	-.553751	-.507393		-21.775936	-7.761329	-.507393
174.00	-.550772	-.506483		-24.551887	-8.297192	-.506483
174.50	-.547896	-.505648		-27.925102	-8.892768	-.505648
175.00	-.545120	-.504888		-32.088637	-9.557409	-.504888
175.50	-.542442	-.504201		-37.324290	-10.302398	-.504201
176.00	-.539862	-.503587		-44.058885	-11.141463	-.503587
176.50	-.537376	-.503046		-52.969112	-12.091452	-.503046
177.00	-.534984	-.502579		-65.191674	-13.173233	-.502579
177.50	-.532683	-.502183		-82.786443	-14.412934	-.502183
178.00	-.530474	-.501860			-15.843654	-.501860
178.50	-.528353	-.501609			-17.507864	-.501609
179.00	-.526320	-.501429			-19.460877	-.501429
179.50	-.524374	-.501322			-21.775936	-.501322
180.00						

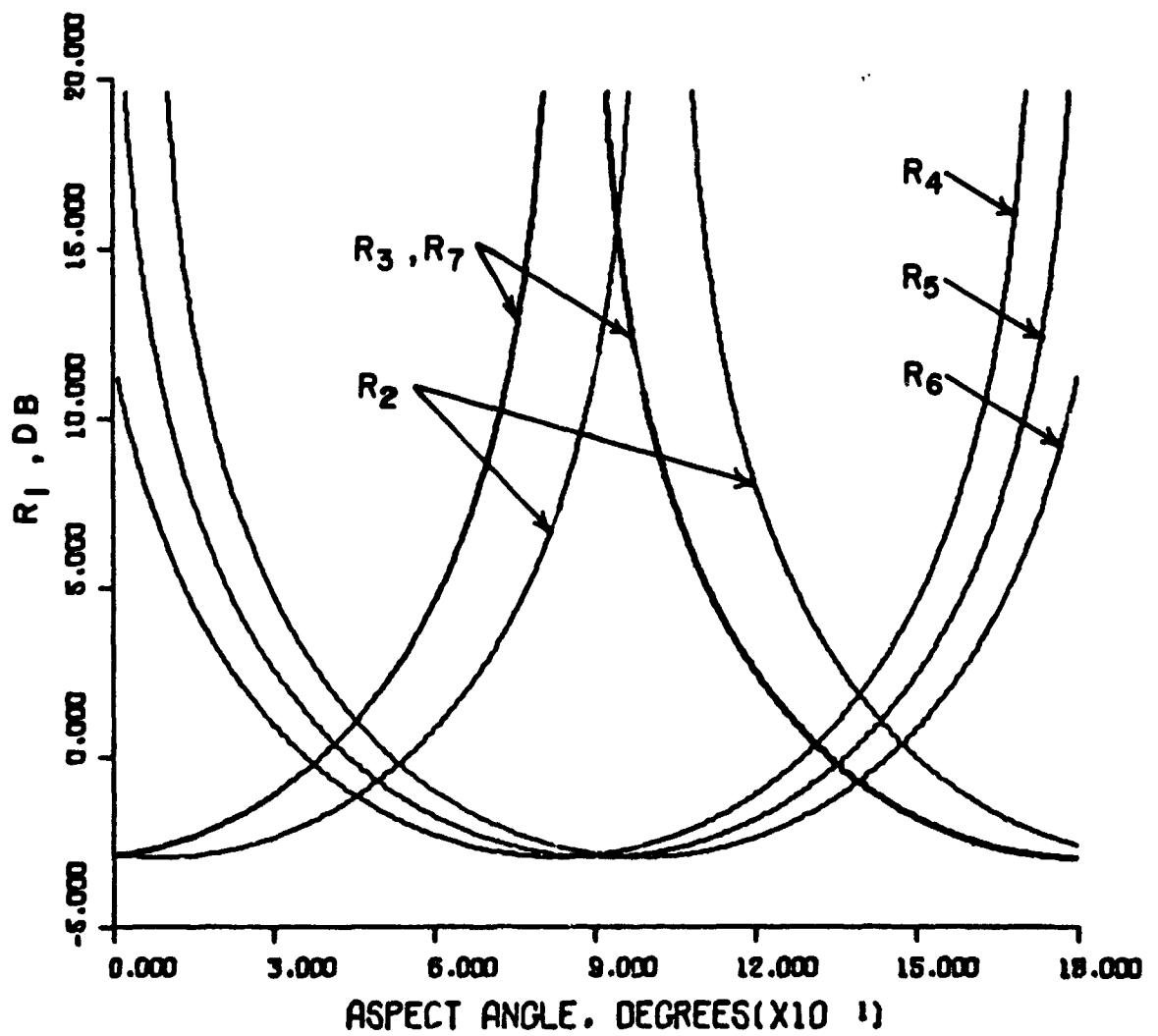


FIGURE A-4. DIFFRACTION COEFFICIENTS
 $(\alpha = 8 \text{ deg}, n = 1 + \alpha/\pi,$
 $R_i = -0.502241)$

TABLE A-5. DIFFRACTION COEFFICIENTS
 $(\alpha = 8 \text{ deg}, n = 1 + \alpha/\pi, R_1 = -0.502241)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.510249	-.512558	-12.973622			-.512558
1.00	-.509207	-.513827	-11.906665			-.513827
1.50	-.508240	-.515173	-10.971292			-.515173
2.00	-.507347	-.516597	-10.146243	-89.962173		-.516597
2.50	-.506526	-.518099	-9.414462	-68.582559		-.518099
3.00	-.505779	-.519681	-8.762125	-54.588656		-.519681
3.50	-.505104	-.521343	-8.177923	-44.786187		-.521343
4.00	-.504501	-.523087	-7.652520	-37.582240		-.523087
4.50	-.503970	-.524914	-7.178151	-32.094868		-.524914
5.00	-.503511	-.526824	-6.748311	-27.797088		-.526824
5.50	-.503122	-.528818	-6.357515	-24.355165		-.528818
6.00	-.502805	-.530899	-6.001107	-21.547825		-.530899
6.50	-.502558	-.533067	-5.675114	-19.222811		-.533067
7.00	-.502382	-.535324	-5.376129	-17.272089		-.535324
7.50	-.502276	-.537671	-5.101214	-15.616995		-.537671
8.00	-.502241	-.540109	-4.847824	-14.198979		-.540109
8.50	-.502276	-.542640	-4.613747	-12.973622		-.542640
9.00	-.502382	-.545265	-4.397048	-11.906665		-.545265
9.50	-.502558	-.547987	-4.196035	-10.971292		-.547987
10.00	-.502805	-.550807	-4.009215	-10.146243	-89.962173	-.550807
10.50	-.503122	-.553726	-3.835273	-9.414462	-68.582559	-.553726
11.00	-.503511	-.556747	-3.673043	-8.762125	-54.588656	-.556747
11.50	-.503970	-.559872	-3.521490	-8.177923	-44.786187	-.559872
12.00	-.504501	-.563102	-3.379691	-7.652520	-37.582240	-.563102
12.50	-.505104	-.566440	-3.246821	-7.178151	-32.094868	-.566440
13.00	-.505779	-.569888	-3.122144	-6.748311	-27.797088	-.569888
13.50	-.506526	-.573449	-3.004995	-6.357515	-24.355165	-.573449
14.00	-.507347	-.577124	-2.894778	-6.001107	-21.547825	-.577124
14.50	-.508240	-.580917	-2.790955	-5.675114	-19.222811	-.580917
15.00	-.509207	-.584829	-2.693040	-5.376129	-17.272089	-.584829
15.50	-.510249	-.588864	-2.600591	-5.101214	-15.616995	-.588864
16.00	-.511306	-.593025	-2.513209	-4.847824	-14.198979	-.593025
16.50	-.512558	-.597314	-2.430529	-4.613747	-12.973622	-.597314
17.00	-.513827	-.601735	-2.352219	-4.397048	-11.906665	-.601735
17.50	-.515173	-.606290	-2.277979	-4.196035	-10.971292	-.606290
18.00	-.516597	-.610984	-2.207529	-4.009215	-10.146243	-.610984
18.50	-.518099	-.615819	-2.140618	-3.835273	-9.414462	-.615819
19.00	-.519681	-.620799	-2.077012	-3.673043	-8.762125	-.620799
19.50	-.521343	-.625928	-2.016498	-3.521490	-8.177923	-.625928
20.00	-.523087	-.631211	-1.958880	-3.379691	-7.652520	-.631211
20.50	-.524914	-.636650	-1.903977	-3.246821	-7.178151	-.636650
21.00	-.526824	-.642251	-1.851621	-3.122144	-6.748311	-.642251
21.50	-.528818	-.648017	-1.801653	-3.004995	-6.357515	-.648017
22.00	-.530899	-.653954	-1.753947	-2.894778	-6.001107	-.653954
22.50	-.533067	-.660066	-1.708354	-2.790955	-5.675114	-.660066
23.00	-.535324	-.666358	-1.664757	-2.693040	-5.376129	-.666358
23.50	-.537671	-.672836	-1.623043	-2.600591	-5.101214	-.672836
24.00	-.540109	-.679505	-1.583106	-2.513209	-4.847824	-.679505
24.50	-.542640	-.686371	-1.544847	-2.430529	-4.613747	-.686371
25.00	-.545265	-.693439	-1.508176	-2.352219	-4.397048	-.693439
25.50	-.547987	-.700716	-1.473006	-2.277979	-4.196035	-.700716
26.00	-.550807	-.708209	-1.439259	-2.207529	-4.009215	-.708209
26.50	-.553726	-.715924	-1.406860	-2.140618	-3.835273	-.715924
27.00	-.556747	-.723868	-1.375739	-2.077012	-3.673043	-.723868

θ	R_2	R_3	R_4	R_5	R_6	R_7
27.50	-.559872	-.732049	-1.345831	-2.016498	-3.521490	-.732049
28.00	-.563102	-.740475	-1.317077	-1.958880	-3.379691	-.740475
28.50	-.566440	-.749152	-1.289417	-1.903977	-3.246821	-.749152
29.00	-.569888	-.758091	-1.262799	-1.851621	-3.122144	-.758091
29.50	-.573449	-.767300	-1.237173	-1.801658	-3.004995	-.767300
30.00	-.577124	-.776788	-1.212491	-1.753947	-2.894778	-.776788
30.50	-.580917	-.786564	-1.188710	-1.708354	-2.790955	-.786564
31.00	-.584829	-.796640	-1.165786	-1.664757	-2.693040	-.796640
31.50	-.588864	-.807024	-1.143681	-1.623043	-2.600591	-.807024
32.00	-.593025	-.817730	-1.122357	-1.583106	-2.513209	-.817730
32.50	-.597314	-.828768	-1.101781	-1.544847	-2.430529	-.828768
33.00	-.601735	-.840150	-1.081918	-1.508176	-2.352219	-.840150
33.50	-.606290	-.851890	-1.062737	-1.473006	-2.277979	-.851890
34.00	-.610984	-.864000	-1.044209	-1.439259	-2.207529	-.864000
34.50	-.615819	-.876496	-1.026307	-1.406860	-2.140618	-.876496
35.00	-.620799	-.889391	-1.009003	-1.375739	-2.077012	-.889391
35.50	-.625928	-.902702	-.992273	-1.345831	-2.016498	-.902702
36.00	-.631211	-.916445	-.976093	-1.317077	-1.958880	-.916445
36.50	-.636650	-.930637	-.960441	-1.289417	-1.903977	-.930637
37.00	-.642251	-.945296	-.945296	-1.262799	-1.851621	-.945296
37.50	-.648017	-.960441	-.930637	-1.237173	-1.801658	-.960441
38.00	-.653954	-.976093	-.916445	-1.212491	-1.753947	-.976093
38.50	-.660066	-.992273	-.902702	-1.188710	-1.708354	-.992273
39.00	-.666358	-1.009003	-.889391	-1.165786	-1.664757	-1.009003
39.50	-.672836	-1.026307	-.876496	-1.143681	-1.623043	-1.026307
40.00	-.679505	-1.044209	-.864000	-1.122357	-1.583106	-1.044209
40.50	-.686371	-1.062737	-.851890	-1.101781	-1.544847	-1.062737
41.00	-.693439	-1.081918	-.840150	-1.081918	-1.508176	-1.081918
41.50	-.700716	-1.101781	-.828768	-1.062737	-1.473006	-1.101781
42.00	-.708209	-1.122357	-.817730	-1.044209	-1.439259	-1.122357
42.50	-.715924	-1.143681	-.807024	-1.026307	-1.406860	-1.143681
43.00	-.723868	-1.165786	-.796640	-1.009003	-1.375739	-1.165786
43.50	-.732049	-1.188710	-.786564	-.992273	-1.345831	-1.188710
44.00	-.740475	-1.212491	-.776788	-.976093	-1.317077	-1.212491
44.50	-.749152	-1.237173	-.767300	-.960441	-1.289417	-1.237173
45.00	-.758091	-1.262799	-.758091	-.945296	-1.262799	-1.262799
45.50	-.767300	-1.289417	-.749152	-.930637	-1.237173	-1.289417
46.00	-.776788	-1.317077	-.740475	-.916445	-1.212491	-1.317077
46.50	-.786564	-1.345831	-.732049	-.902702	-1.188710	-1.345831
47.00	-.796640	-1.375739	-.723868	-.889391	-1.165786	-1.375739
47.50	-.807024	-1.406860	-.715924	-.876496	-1.143681	-1.406860
48.00	-.817730	-1.439259	-.708209	-.864000	-1.122357	-1.439259
48.50	-.828768	-1.473006	-.700716	-.851890	-1.101781	-1.473006
49.00	-.840150	-1.508176	-.693439	-.840150	-1.081918	-1.508176
49.50	-.851890	-1.544847	-.686371	-.828768	-1.062737	-1.544847
50.00	-.864000	-1.583106	-.679505	-.817730	-1.044209	-1.583106
50.50	-.876496	-1.623043	-.672836	-.807024	-1.026307	-1.623043
51.00	-.889391	-1.664757	-.666358	-.796640	-1.009003	-1.664757
51.50	-.902702	-1.708354	-.660066	-.786564	-.992273	-1.708354
52.00	-.916445	-1.753947	-.653954	-.776788	-.976093	-1.753947
52.50	-.930637	-1.801658	-.648017	-.767300	-.960441	-1.801658
53.00	-.945296	-1.851621	-.642251	-.758091	-.945296	-1.851621
53.50	-.960441	-1.903977	-.636550	-.749152	-.930637	-1.903977
54.00	-.976093	-1.958880	-.631211	-.740475	-.916445	-1.958880
54.50	-.992273	-2.016498	-.625928	-.732049	-.902702	-2.016498
55.00	-1.009003	-2.077012	-.620799	-.723868	-.889391	-2.077012

<u>θ</u>	<u>R_0</u>	<u>R_0</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
55.50	-1.025307	-2.140618	-.615819	-.715924	-.876496	-2.140618
56.00	-1.044209	-2.207529	-.610984	-.708209	-.864000	-2.207529
56.50	-1.062137	-2.277979	-.606290	-.700716	-.851890	-2.277979
57.00	-1.081918	-2.352219	-.601735	-.693439	-.840150	-2.352219
57.50	-1.101781	-2.430529	-.597314	-.686371	-.828768	-2.430529
58.00	-1.122357	-2.513209	-.593025	-.679505	-.817730	-2.513209
58.50	-1.143681	-2.600591	-.588864	-.672836	-.807024	-2.600591
59.00	-1.165786	-2.693040	-.584829	-.666358	-.796640	-2.693040
59.50	-1.188710	-2.790955	-.580917	-.660066	-.786564	-2.790955
60.00	-1.212491	-2.894778	-.577124	-.653954	-.776788	-2.894778
60.50	-1.237173	-3.004995	-.573449	-.648017	-.767300	-3.004995
61.00	-1.262799	-3.122144	-.569888	-.642251	-.758091	-3.122144
61.50	-1.289417	-3.245821	-.566440	-.636650	-.749152	-3.245821
62.00	-1.317077	-3.375991	-.563102	-.631211	-.740475	-3.375991
62.50	-1.345821	-3.512149	-.559872	-.625928	-.732049	-3.512149
63.00	-1.375739	-3.653043	-.556747	-.620799	-.723868	-3.653043
63.50	-1.406860	-3.8035273	-.553726	-.615819	-.715924	-3.8035273
64.00	-1.439259	-4.009215	-.550807	-.610984	-.708209	-4.009215
64.50	-1.473006	-4.195035	-.547987	-.606290	-.700716	-4.195035
65.00	-1.508176	-4.397048	-.545265	-.601735	-.693439	-4.397048
65.50	-1.544847	-4.613747	-.542640	-.597314	-.686371	-4.613747
66.00	-1.583106	-4.847824	-.540109	-.593025	-.679505	-4.847824
66.50	-1.623043	-5.101214	-.537671	-.588864	-.672836	-5.101214
67.00	-1.664757	-5.376129	-.535324	-.584829	-.666358	-5.376129
67.50	-1.708354	-5.675114	-.533067	-.580917	-.660066	-5.675114
68.00	-1.753947	-6.001107	-.530889	-.577124	-.653954	-6.001107
68.50	-1.801658	-6.357515	-.528818	-.573449	-.648017	-6.357515
69.00	-1.851621	-6.748311	-.526824	-.569888	-.642251	-6.748311
69.50	-1.903977	-7.178151	-.524914	-.566440	-.636650	-7.178151
70.00	-1.958880	-7.652520	-.523087	-.563102	-.631211	-7.652520
70.50	-2.016448	-8.177923	-.521343	-.559872	-.625928	-8.177923
71.00	-2.077012	-8.762125	-.519581	-.556747	-.620799	-8.762125
71.50	-2.140019	-9.414462	-.518099	-.553726	-.615819	-9.414462
72.00	-2.207529	-10.146243	-.516597	-.550807	-.610984	-10.146243
72.50	-2.277979	-10.971292	-.515173	-.547987	-.606290	-10.971292
73.00	-2.352219	-11.906665	-.513827	-.545265	-.601735	-11.906665
73.50	-2.430529	-12.973622	-.512558	-.542640	-.597314	-12.973622
74.00	-2.513209	-14.198979	-.511366	-.540109	-.593025	-14.198979
74.50	-2.600591	-15.616995	-.510249	-.537671	-.588864	-15.616995
75.00	-2.693040	-17.272089	-.509207	-.535324	-.584829	-17.272089
75.50	-2.790955	-19.222811	-.508240	-.533067	-.580917	-19.222811
76.00	-2.894778	-21.547825	-.507347	-.530889	-.577124	-21.547825
76.50	-3.004995	-24.355155	-.506526	-.528818	-.573449	-24.355155
77.00	-3.122144	-27.747038	-.505779	-.526824	-.569888	-27.747038
77.50	-3.245821	-32.094868	-.505104	-.524914	-.566440	-32.094868
78.00	-3.375991	-37.542240	-.504501	-.523087	-.563102	-37.542240
78.50	-3.512149	-44.786187	-.503970	-.521343	-.559872	-44.786187
79.00	-3.653043	-54.544536	-.503511	-.519681	-.556747	-54.544536
79.50	-3.8035273	-68.542559	-.503122	-.518099	-.553726	-68.542559
80.00	-4.009215	-89.962173	-.502805	-.516597	-.550807	-89.962173
80.50	-4.195035		-.502559	-.515173	-.547987	
81.00	-4.397048		-.502382	-.513827	-.545265	
81.50	-4.613747		-.502276	-.512558	-.542640	
82.00						
82.50						
83.00	-5.375129		-.502382	-.509207	-.535324	

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
83.50	-5.675114		-.502558	-.502240	-.533067	
84.00	-6.001107		-.502825	-.507347	-.530899	
84.50	-6.357515		-.503122	-.506526	-.528818	
85.00	-6.748311		-.503511	-.505779	-.526824	
85.50	-7.178151		-.503970	-.505104	-.524914	
86.00	-7.652520		-.504501	-.504501	-.523087	
86.50	-8.177723		-.505104	-.503970	-.521343	
87.00	-8.762125		-.505779	-.503511	-.519681	
87.50	-9.414462		-.506526	-.503122	-.518099	
88.00	-10.146243		-.507347	-.502805	-.516597	
88.50	-10.971292		-.508240	-.502558	-.515173	
89.00	-11.906665		-.509207	-.502382	-.513827	
89.50	-12.973622		-.510249	-.502276	-.512558	
90.00						
90.50	-15.616995		-.512558	-.502276	-.510249	
91.00	-17.272089		-.513927	-.502382	-.509207	
91.50	-19.222311		-.515173	-.502558	-.508240	
92.00	-21.567425	-89.962173	-.516597	-.502805	-.507347	-89.962173
92.50	-24.355165	-68.582559	-.518099	-.503122	-.506526	-68.582559
93.00	-27.777088	-54.588656	-.519681	-.503511	-.505779	-54.588656
93.50	-32.074608	-44.745187	-.521343	-.503970	-.505104	-44.745187
94.00	-37.582240	-37.582240	-.523087	-.504501	-.504501	-37.582240
94.50	-44.762125	-32.094868	-.524914	-.505104	-.503970	-32.094868
95.00	-54.588656	-27.777088	-.526824	-.505779	-.503511	-27.777088
95.50	-68.582559	-24.355165	-.528818	-.506526	-.503122	-24.355165
96.00	-89.962173	-21.567425	-.530899	-.507347	-.502805	-21.567425
96.50		-19.222311	-.533067	-.508240	-.502558	-19.222311
97.00		-17.272089	-.535324	-.509207	-.502382	-17.272089
97.50		-15.616995	-.537671	-.510249	-.502276	-15.616995
98.00						
98.50						
99.00		-11.906665	-.545255	-.513927	-.502382	-11.906665
99.50		-10.971292	-.547987	-.515173	-.502558	-10.971292
100.00		-10.146243	-.550807	-.516597	-.502805	-10.146243
100.50		-9.414462	-.553726	-.518099	-.503122	-9.414462
101.00		-8.762125	-.556747	-.519691	-.503511	-8.762125
101.50		-8.177923	-.559972	-.521343	-.503970	-8.177923
102.00		-7.652520	-.563302	-.523087	-.504501	-7.652520
102.50		-7.178151	-.566640	-.524914	-.505104	-7.178151
103.00		-6.748311	-.569988	-.526824	-.505779	-6.748311
103.50		-6.357515	-.573449	-.528818	-.506526	-6.357515
104.00		-6.001107	-.577124	-.530899	-.507347	-6.001107
104.50		-5.675114	-.580917	-.533067	-.508240	-5.675114
105.00		-5.375129	-.584829	-.535324	-.509207	-5.375129
105.50		-5.101214	-.588966	-.537671	-.510249	-5.101214
106.00		-4.847826	-.593325	-.540109	-.511366	-4.847826
106.50		-4.613747	-.597916	-.542640	-.512558	-4.613747
107.00		-4.407044	-.602725	-.545365	-.513827	-4.407044
107.50		-4.198035	-.606240	-.547987	-.515173	-4.198035
108.00	-89.962173	-4.002215	-.610386	-.550807	-.516597	-4.002215
108.50	-68.582559	-3.835273	-.614914	-.553726	-.518099	-3.835273
109.00	-54.588656	-3.673063	-.620749	-.556747	-.519691	-3.673063
109.50	-44.745187	-3.521490	-.626928	-.559972	-.521343	-3.521490
110.00	-37.582240	-3.379691	-.633211	-.563302	-.523087	-3.379691
110.50	-32.094868	-3.246821	-.639659	-.566640	-.524914	-3.246821
111.00	-27.777088	-3.122146	-.646251	-.569988	-.526824	-3.122146

θ	R_2	R_3	R_4	R_5	R_6	R_7
111.50	-24.353165	-3.004995	-.648017	-.573449	-.528818	-3.004995
112.00	-21.547325	-2.894778	-.653954	-.577124	-.530899	-2.894778
112.50	-19.222811	-2.790955	-.660066	-.580917	-.533067	-2.790955
113.00	-17.272084	-2.693040	-.666358	-.584829	-.535324	-2.693040
113.50	-15.616995	-2.600591	-.672836	-.588964	-.537671	-2.600591
114.00	-14.198974	-2.513209	-.679505	-.593025	-.540109	-2.513209
114.50	-12.973622	-2.430529	-.686371	-.597314	-.542640	-2.430529
115.00	-11.906665	-2.352219	-.693439	-.601735	-.545265	-2.352219
115.50	-10.971292	-2.277979	-.700716	-.606290	-.547987	-2.277979
116.00	-10.146243	-2.207529	-.708209	-.610984	-.550807	-2.207529
116.50	-9.414462	-2.140618	-.715924	-.615819	-.553726	-2.140618
117.00	-8.762125	-2.077012	-.723868	-.620799	-.556747	-2.077012
117.50	-8.177923	-2.016498	-.732049	-.625928	-.559872	-2.016498
118.00	-7.652520	-1.958880	-.740475	-.631211	-.563102	-1.958880
118.50	-7.178151	-1.903977	-.749152	-.636650	-.566440	-1.903977
119.00	-6.748311	-1.851621	-.758091	-.642251	-.569888	-1.851621
119.50	-6.357515	-1.801658	-.767300	-.648017	-.573449	-1.801658
120.00	-6.001107	-1.753947	-.776788	-.653954	-.577124	-1.753947
120.50	-5.675114	-1.708354	-.786564	-.660066	-.580917	-1.708354
121.00	-5.376129	-1.664757	-.796640	-.666358	-.584829	-1.664757
121.50	-5.101214	-1.623043	-.807024	-.672836	-.588964	-1.623043
122.00	-4.847324	-1.583106	-.817730	-.679505	-.593025	-1.583106
122.50	-4.613747	-1.544847	-.828768	-.686371	-.597314	-1.544847
123.00	-4.397048	-1.508176	-.840150	-.693439	-.601735	-1.508176
123.50	-4.196035	-1.473006	-.851890	-.700716	-.606290	-1.473006
124.00	-4.009215	-1.439259	-.864000	-.708209	-.610984	-1.439259
124.50	-3.835273	-1.406860	-.876496	-.715924	-.615819	-1.406860
125.00	-3.673043	-1.375739	-.889391	-.723868	-.620799	-1.375739
125.50	-3.521490	-1.345831	-.902702	-.732049	-.625928	-1.345831
126.00	-3.379691	-1.317077	-.916445	-.740475	-.631211	-1.317077
126.50	-3.245821	-1.289417	-.930637	-.749152	-.636650	-1.289417
127.00	-3.122144	-1.262799	-.945296	-.758091	-.642251	-1.262799
127.50	-3.004995	-1.237173	-.960441	-.767300	-.648017	-1.237173
128.00	-2.894778	-1.212491	-.976093	-.776788	-.653954	-1.212491
128.50	-2.790955	-1.188710	-.992273	-.786564	-.660066	-1.188710
129.00	-2.693040	-1.165786	-1.009003	-.796640	-.666358	-1.165786
129.50	-2.600591	-1.143681	-1.026307	-.807024	-.672836	-1.143681
130.00	-2.513209	-1.122357	-1.044209	-.817730	-.679505	-1.122357
130.50	-2.430529	-1.101781	-1.062737	-.828768	-.686371	-1.101781
131.00	-2.352219	-1.081918	-1.081918	-.840150	-.693439	-1.081918
131.50	-2.277979	-1.062737	-1.101781	-.851890	-.700716	-1.062737
132.00	-2.207529	-1.044209	-1.122357	-.864000	-.708209	-1.044209
132.50	-2.140618	-1.026307	-1.143681	-.876496	-.715924	-1.026307
133.00	-2.077012	-1.009003	-1.165786	-.889391	-.723868	-1.009003
133.50	-2.016498	-.992273	-1.188710	-.902702	-.732049	-.992273
134.00	-1.958880	-.976093	-1.212491	-.916445	-.740475	-.976093
134.50	-1.903977	-.960441	-1.237173	-.930637	-.749152	-.960441
135.00	-1.851621	-.945296	-1.262799	-.945296	-.758091	-.945296
135.50	-1.801658	-.930637	-1.289417	-.960441	-.767300	-.930637
136.00	-1.753947	-.916445	-1.317077	-.976093	-.776788	-.916445
136.50	-1.708354	-.902702	-1.345831	-.992273	-.786564	-.902702
137.00	-1.664757	-.889391	-1.375739	-1.009003	-.796640	-.889391
137.50	-1.623043	-.876496	-1.406860	-1.026307	-.807024	-.876496
138.00	-1.583106	-.864000	-1.439259	-1.044209	-.817730	-.864000
138.50	-1.544847	-.851890	-1.473006	-1.062737	-.828768	-.851890
139.00	-1.508176	-.840150	-1.508176	-1.081918	-.840150	-.840150

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
139.50	-1.473006	-.828768	-1.544847	-1.101781	-.851890	-.828768
140.00	-1.439259	-.817730	-1.583106	-1.122357	-.864000	-.817730
140.50	-1.406000	-.807024	-1.623043	-1.143681	-.876495	-.807024
141.00	-1.375739	-.796640	-1.664757	-1.165786	-.889391	-.796640
141.50	-1.345831	-.786564	-1.708354	-1.188710	-.902702	-.786564
142.00	-1.317077	-.776788	-1.753947	-1.212491	-.916445	-.776788
142.50	-1.289417	-.767300	-1.801658	-1.237173	-.930637	-.767300
143.00	-1.262799	-.758091	-1.851621	-1.262799	-.945296	-.758091
143.50	-1.237173	-.749152	-1.903917	-1.289417	-.960441	-.749152
144.00	-1.212491	-.740475	-1.958880	-1.317077	-.976093	-.740475
144.50	-1.188710	-.732049	-2.016498	-1.345831	-.992273	-.732049
145.00	-1.165786	-.723868	-2.077012	-1.375739	-1.009003	-.723868
145.50	-1.143681	-.715924	-2.140618	-1.406860	-1.026307	-.715924
146.00	-1.122357	-.708209	-2.207529	-1.439259	-1.044209	-.708209
146.50	-1.101781	-.700716	-2.277979	-1.473006	-1.062737	-.700716
147.00	-1.081918	-.693439	-2.352219	-1.508176	-1.081918	-.693439
147.50	-1.062737	-.686371	-2.430529	-1.544847	-1.101781	-.686371
148.00	-1.044209	-.679505	-2.513209	-1.583106	-1.122357	-.679505
148.50	-1.026307	-.672836	-2.600591	-1.623043	-1.143681	-.672836
149.00	-1.009003	-.666358	-2.693040	-1.664757	-1.165786	-.666358
149.50	-.992273	-.660066	-2.790955	-1.708354	-1.188710	-.660066
150.00	-.976093	-.653954	-2.894778	-1.753947	-1.212491	-.653954
150.50	-.960441	-.648017	-3.004995	-1.801658	-1.237173	-.648017
151.00	-.945296	-.642251	-3.122144	-1.851621	-1.262799	-.642251
151.50	-.930637	-.636650	-3.246821	-1.903917	-1.289417	-.636650
152.00	-.916445	-.631211	-3.379691	-1.958880	-1.317077	-.631211
152.50	-.902702	-.625928	-3.521490	-2.016498	-1.345831	-.625928
153.00	-.889391	-.620799	-3.673043	-2.077012	-1.375739	-.620799
153.50	-.876495	-.615819	-3.835273	-2.140618	-1.406860	-.615819
154.00	-.864000	-.610984	-4.009215	-2.207529	-1.439259	-.610984
154.50	-.851890	-.606290	-4.196035	-2.277979	-1.473006	-.606290
155.00	-.840150	-.601735	-4.397048	-2.352219	-1.508176	-.601735
155.50	-.828768	-.597314	-4.613747	-2.430529	-1.544847	-.597314
156.00	-.817730	-.593025	-4.847824	-2.513209	-1.583106	-.593025
156.50	-.807024	-.588864	-5.101214	-2.600591	-1.623043	-.588864
157.00	-.796640	-.584829	-5.376129	-2.693040	-1.664757	-.584829
157.50	-.786564	-.580917	-5.675114	-2.790955	-1.708354	-.580917
158.00	-.776788	-.577124	-6.001107	-2.894778	-1.753947	-.577124
158.50	-.767300	-.573449	-6.357515	-3.004995	-1.801658	-.573449
159.00	-.758091	-.569888	-6.748311	-3.122144	-1.851621	-.569888
159.50	-.749152	-.566440	-7.178151	-3.246821	-1.903917	-.566440
160.00	-.740475	-.563102	-7.652520	-3.379691	-1.958880	-.563102
160.50	-.732049	-.559872	-8.171923	-3.521490	-2.016498	-.559872
161.00	-.723868	-.556747	-8.746215	-3.673043	-2.077012	-.556747
161.50	-.715924	-.553726	-9.414452	-3.835273	-2.140618	-.553726
162.00	-.708209	-.550807	-10.146243	-4.009215	-2.207529	-.550807
162.50	-.700716	-.547987	-10.971292	-4.196035	-2.277979	-.547987
163.00	-.693439	-.545265	-11.906605	-4.397048	-2.352219	-.545265
163.50	-.686371	-.542640	-12.973622	-4.613747	-2.430529	-.542640
164.00	-.679505	-.540109	-14.198979	-4.847824	-2.513209	-.540109
164.50	-.672836	-.537671	-15.616495	-5.101214	-2.600591	-.537671
165.00	-.666358	-.535324	-17.272089	-5.376129	-2.693040	-.535324
165.50	-.660066	-.533067	-19.227311	-5.675114	-2.790955	-.533067
166.00	-.653954	-.530899	-21.547825	-6.001107	-2.894778	-.530899
166.50	-.648017	-.528818	-24.355165	-6.357515	-3.004995	-.528818
167.00	-.642251	-.526824	-27.797988	-6.748311	-3.122144	-.526824

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
167.50	-.636650	-.524914	-32.094868	-7.178151	-3.246821	-.524914
168.00	-.631211	-.523087	-37.582240	-7.652520	-3.379691	-.523087
168.50	-.625923	-.521343	-44.786187	-8.177923	-3.521490	-.521343
169.00	-.620799	-.519681	-54.588656	-8.762125	-3.673043	-.519681
169.50	-.615819	-.518099	-68.582559	-9.414462	-3.835273	-.518099
170.00	-.610984	-.516597	-89.962173	-10.146243	-4.009215	-.516597
170.50	-.606290	-.515173		-10.971292	-4.196035	-.515173
171.00	-.601735	-.513827		-11.906665	-4.397048	-.513827
171.50	-.597314	-.512558		-12.973622	-4.613747	-.512558
172.00	-.593025	-.511366		-14.198979	-4.847824	-.511366
172.50	-.588864	-.510249		-15.616995	-5.101214	-.510249
173.00	-.584829	-.509207		-17.272089	-5.376129	-.509207
173.50	-.580917	-.508240		-19.222811	-5.675114	-.508240
174.00	-.577124	-.507347		-21.547825	-6.001107	-.507347
174.50	-.573449	-.506526		-24.355165	-6.357515	-.506526
175.00	-.569888	-.505779		-27.797088	-6.748311	-.505779
175.50	-.566440	-.505104		-32.094868	-7.178151	-.505104
176.00	-.563102	-.504501		-37.582240	-7.652520	-.504501
176.50	-.559872	-.503970		-44.786187	-8.177923	-.503970
177.00	-.556747	-.503511		-54.588656	-8.762125	-.503511
177.50	-.553726	-.503122		-68.582559	-9.414462	-.503122
178.00	-.550807	-.502805		-89.962173	-10.146243	-.502805
178.50	-.547987	-.502558			-10.971292	-.502558
179.00	-.545265	-.502382			-11.906665	-.502382
179.50	-.542640	-.502276			-12.973622	-.502276
180.00						

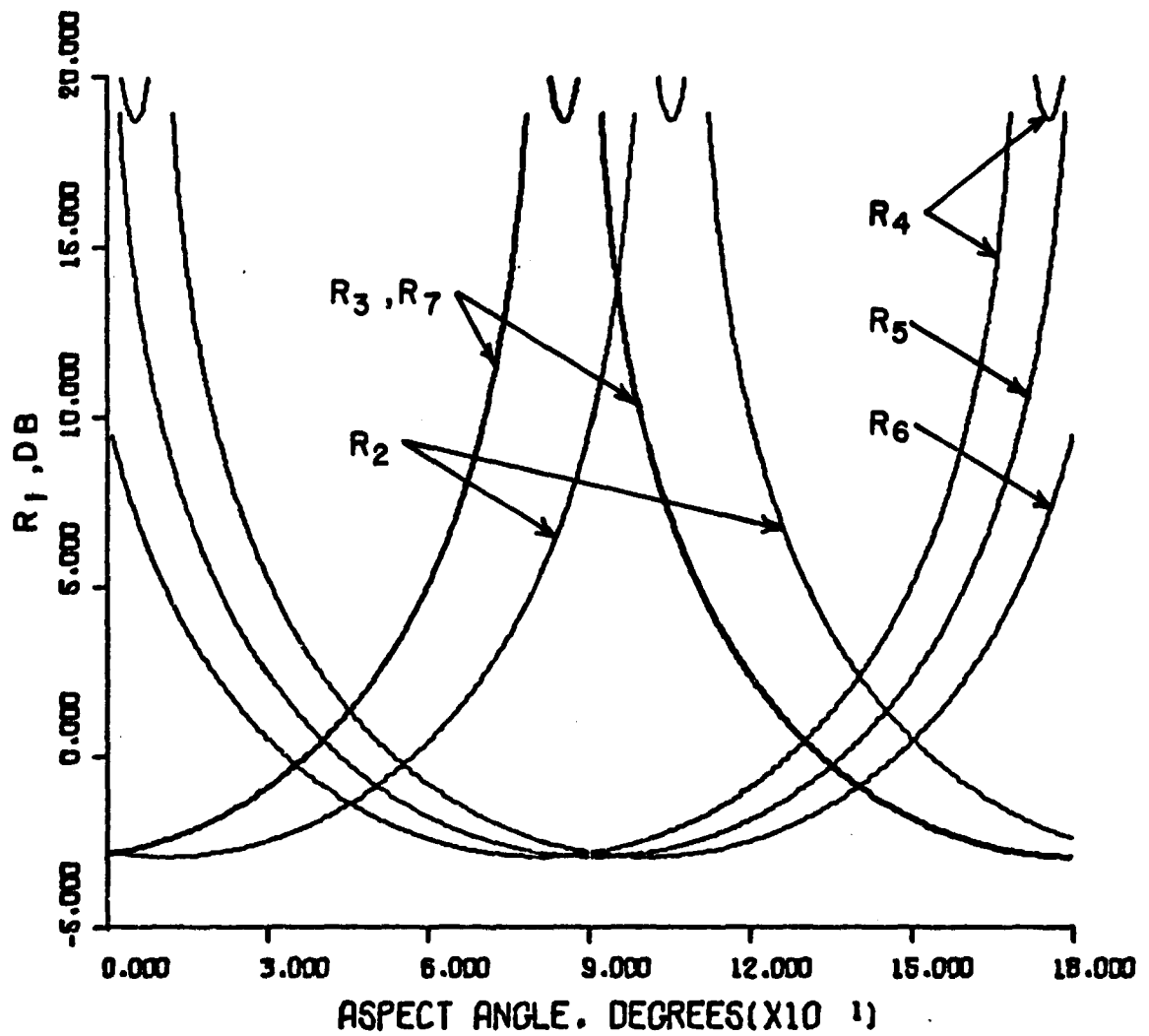


FIGURE A-5. DIFFRACTION COEFFICIENTS
 $(\alpha = 10 \text{ deg}, n = 1 + \alpha/\pi,$
 $R_1 = -0.503433)$

TABLE A-6. DIFFRACTION COEFFICIENTS
 $(\alpha = 10 \text{ deg}, n = 1 + \alpha/\pi, R_1 = -0.503433)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						-.519027
.50	-.516151	-.519027	-8.704958			-.520582
1.00	-.514928	-.520582	-8.123159			-.522216
1.50	-.513580	-.522216	-7.600598			-.523930
2.00	-.512408	-.523930	-7.129309	-76.718262		-.525725
2.50	-.511310	-.525725	-6.702645	-58.958658	97.816830	-.527602
3.00	-.510285	-.527602	-6.315026	-47.275975	87.318523	-.529562
3.50	-.509334	-.529562	-5.961732	-39.050865	80.588842	-.531606
4.00	-.508455	-.531606	-5.638749	-32.975525	76.382792	-.533736
4.50	-.507649	-.533736	-5.342642	-28.324771	74.063093	-.535953
5.00	-.506914	-.535953	-5.070459	-24.664524	73.320789	-.538258
5.50	-.506250	-.538258	-4.819648	-21.719341	74.063093	-.540652
6.00	-.505657	-.540652	-4.587994	-19.306198	76.382792	-.543138
6.50	-.505135	-.543138	-4.373565	-17.298864	80.588842	-.545716
7.00	-.504682	-.545716	-4.174671	-15.607552	87.318523	-.548388
7.50	-.504300	-.548388	-3.989828	-14.166719	97.816830	-.551155
8.00	-.503988	-.551155	-3.817725	-12.927451		-.554021
8.50	-.503745	-.554021	-3.657205	-11.852544		-.556986
9.00	-.503572	-.556986	-3.507240	-10.913221		-.560052
9.50	-.503468	-.560052	-3.366914	-10.086900		-.563221
10.00	-.503433	-.563221	-3.235411	-9.355626		-.566496
10.50	-.503468	-.566496	-3.112000	-8.704958		-.569878
11.00	-.503572	-.569878	-2.996025	-8.123159		-.573369
11.50	-.503745	-.573369	-2.886896	-7.600598	-76.718262	-.576973
12.00	-.503988	-.576973	-2.784081	-7.129309	-58.958658	-.580691
12.50	-.504300	-.580691	-2.687099	-6.702645	-47.275975	-.584526
13.00	-.504682	-.584526	-2.595514	-6.315026	-39.050865	-.588481
13.50	-.505135	-.588481	-2.508931	-5.961732	-32.975525	-.592558
14.00	-.505657	-.592558	-2.426992	-5.638749	-28.324771	-.596760
14.50	-.506250	-.596760	-2.349369	-5.342642	-24.664524	-.601091
15.00	-.506914	-.601091	-2.275763	-5.070459	-21.719341	-.605552
15.50	-.507649	-.605552	-2.205901	-4.819648	-19.306198	-.610148
16.00	-.508455	-.610148	-2.139533	-4.587994	-17.298864	-.614881
16.50	-.509334	-.614881	-2.076430	-4.373565	-15.607552	-.619756
17.00	-.510285	-.619756	-2.016382	-4.174671	-14.166719	-.624776
17.50	-.511310	-.624776	-1.959194	-3.989828	-12.927451	-.629944
18.00	-.512408	-.629944	-1.904689	-3.817725	-11.852544	-.635265
18.50	-.513580	-.635265	-1.852701	-3.657205	-10.913221	-.640742
19.00	-.514928	-.640742	-1.803079	-3.507240	-10.086900	-.646381
19.50	-.516151	-.646381	-1.755681	-3.366914	-9.355626	-.652184
20.00	-.517551	-.652184	-1.710379	-3.235411	-8.704958	-.658158
20.50	-.519027	-.658158	-1.667050	-3.112000	-8.123159	-.664306
21.00	-.520582	-.664306	-1.625583	-2.996025	-7.600598	-.670634
21.50	-.522216	-.670634	-1.585873	-2.886896	-7.129309	-.677147
22.00	-.523930	-.677147	-1.547824	-2.784081	-6.702645	-.683850
22.50	-.525725	-.683850	-1.511346	-2.687099	-6.315026	-.690750
23.00	-.527602	-.690750	-1.476354	-2.595514	-5.961732	-.697851
23.50	-.529562	-.697851	-1.442770	-2.508931	-5.638749	-.705161
24.00	-.531606	-.705161	-1.410520	-2.426992	-5.342642	-.712686
24.50	-.533736	-.712686	-1.379536	-2.349369	-5.070459	-.720432
25.00	-.535953	-.720432	-1.349754	-2.275763	-4.819648	-.728406
25.50	-.538258	-.728406	-1.321113	-2.205901	-4.587994	-.736616
26.00	-.540652	-.736616	-1.293558	-2.139533	-4.373565	-.745070
26.50	-.543138	-.745070	-1.267035	-2.076430	-4.174671	-.753776
27.00	-.545716	-.753776	-1.241495	-2.016382		

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θ	R_2	R_3	R_4	R_5	R_6	R_7
27.50	-.548388	-.762741	-1.216890	-1.959194	-3.989828	-.762741
28.00	-.551155	-.771975	-1.193178	-1.904689	-3.817725	-.771975
28.50	-.554021	-.781487	-1.170317	-1.852701	-3.657205	-.781487
29.00	-.556986	-.791287	-1.148268	-1.803079	-3.507240	-.791287
29.50	-.560052	-.801384	-1.126995	-1.755681	-3.366914	-.801384
30.00	-.563221	-.811789	-1.106462	-1.710379	-3.235411	-.811789
30.50	-.566496	-.822514	-1.086637	-1.667050	-3.112000	-.822514
31.00	-.569878	-.833569	-1.067489	-1.625583	-2.996025	-.833569
31.50	-.573359	-.844967	-1.048990	-1.585873	-2.886896	-.844967
32.00	-.576973	-.856720	-1.031111	-1.547824	-2.784081	-.856720
32.50	-.580691	-.868843	-1.013827	-1.511346	-2.687099	-.868843
33.00	-.584526	-.881349	-.997113	-1.476354	-2.595514	-.881349
33.50	-.588481	-.894252	-.980945	-1.442770	-2.508731	-.894252
34.00	-.592558	-.907568	-.965302	-1.410520	-2.426992	-.907568
34.50	-.596760	-.921314	-.950162	-1.379536	-2.349369	-.921314
35.00	-.601091	-.935506	-.935506	-1.349754	-2.275763	-.935506
35.50	-.605552	-.950162	-.921314	-1.321113	-2.205901	-.950162
36.00	-.610148	-.965302	-.907568	-1.293558	-2.139533	-.965302
36.50	-.614881	-.980945	-.894252	-1.267035	-2.076430	-.980945
37.00	-.619756	-.997113	-.881349	-1.241495	-2.016382	-.997113
37.50	-.624776	-1.013827	-.868843	-1.216890	-1.959194	-1.013827
38.00	-.629944	-1.031111	-.856720	-1.193178	-1.904689	-1.031111
38.50	-.635265	-1.048990	-.844967	-1.170317	-1.852701	-1.048990
39.00	-.640742	-1.067489	-.833569	-1.148268	-1.803079	-1.067489
39.50	-.646381	-1.086637	-.822514	-1.126995	-1.755681	-1.086637
40.00	-.652184	-1.106462	-.811789	-1.106462	-1.710379	-1.106462
40.50	-.658158	-1.126995	-.801384	-1.086637	-1.667050	-1.126995
41.00	-.664306	-1.148268	-.791287	-1.067489	-1.625583	-1.148268
41.50	-.670634	-1.170317	-.781487	-1.048990	-1.585873	-1.170317
42.00	-.677147	-1.193178	-.771975	-1.031111	-1.547824	-1.193178
42.50	-.683850	-1.216890	-.762741	-1.013827	-1.511346	-1.216890
43.00	-.690750	-1.241495	-.753776	-.997113	-1.476354	-1.241495
43.50	-.697851	-1.267035	-.745070	-.980945	-1.442770	-1.267035
44.00	-.705161	-1.293558	-.736616	-.965302	-1.410520	-1.293558
44.50	-.712686	-1.321113	-.728406	-.950162	-1.379536	-1.321113
45.00	-.720432	-1.349754	-.720432	-.935506	-1.349754	-1.349754
45.50	-.728406	-1.379536	-.712686	-.921314	-1.321113	-1.379536
46.00	-.736616	-1.410520	-.705161	-.907568	-1.293558	-1.410520
46.50	-.745070	-1.442770	-.697851	-.894252	-1.267035	-1.442770
47.00	-.753776	-1.476354	-.690750	-.881349	-1.241495	-1.476354
47.50	-.762741	-1.511346	-.683850	-.868843	-1.216890	-1.511346
48.00	-.771975	-1.547824	-.677147	-.856720	-1.193178	-1.547824
48.50	-.781487	-1.585873	-.670634	-.844967	-1.170317	-1.585873
49.00	-.791287	-1.625583	-.664306	-.833569	-1.148268	-1.625583
49.50	-.801384	-1.667050	-.658158	-.822514	-1.126995	-1.667050
50.00	-.811789	-1.710379	-.652184	-.811789	-1.106462	-1.710379
50.50	-.822514	-1.755681	-.646381	-.801384	-1.086637	-1.755681
51.00	-.833569	-1.803079	-.640742	-.791287	-1.067489	-1.803079
51.50	-.844967	-1.852701	-.635265	-.781487	-1.048990	-1.852701
52.00	-.856720	-1.904689	-.629944	-.771975	-1.031111	-1.904689
52.50	-.868843	-1.959194	-.624776	-.762741	-1.013827	-1.959194
53.00	-.881349	-2.016382	-.619756	-.753776	-.997113	-2.016382
53.50	-.894252	-2.076430	-.614881	-.745070	-.980945	-2.076430
54.00	-.907568	-2.139533	-.610148	-.736616	-.965302	-2.139533
54.50	-.921314	-2.205901	-.605552	-.728406	-.950162	-2.205901
55.00	-.935506	-2.275763	-.601091	-.720432	-.935506	-2.275763

<u>0</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
55.50	-.950162	-2.349369	-.596760	-.712686	-.921314	-2.349369
56.00	-.965302	-2.426992	-.592558	-.705161	-.907568	-2.426992
56.50	-.980945	-2.508931	-.588481	-.697851	-.894252	-2.508931
57.00	-.997113	-2.595514	-.584526	-.690750	-.881349	-2.595514
57.50	-1.013327	-2.687099	-.580691	-.683850	-.868843	-2.687099
58.00	-1.031111	-2.784081	-.576973	-.677147	-.856720	-2.784081
58.50	-1.048990	-2.886896	-.573369	-.670634	-.844967	-2.886896
59.00	-1.067489	-2.996025	-.569878	-.664306	-.833569	-2.996025
59.50	-1.086637	-3.112000	-.566496	-.658158	-.822514	-3.112000
60.00	-1.106462	-3.235411	-.563221	-.652184	-.811789	-3.235411
60.50	-1.126995	-3.366914	-.560052	-.646331	-.801384	-3.366914
61.00	-1.148268	-3.507240	-.556986	-.640742	-.791287	-3.507240
61.50	-1.170317	-3.657205	-.554021	-.635265	-.781487	-3.657205
62.00	-1.193178	-3.817725	-.551155	-.629944	-.771975	-3.817725
62.50	-1.216890	-3.989828	-.548388	-.624776	-.762741	-3.989828
63.00	-1.241495	-4.174671	-.545716	-.619756	-.753776	-4.174671
63.50	-1.267035	-4.373565	-.543138	-.614881	-.745070	-4.373565
64.00	-1.293558	-4.587994	-.540652	-.610148	-.736616	-4.587994
64.50	-1.321113	-4.819648	-.538258	-.605552	-.728406	-4.819648
65.00	-1.349754	-5.070459	-.535953	-.601091	-.720432	-5.070459
65.50	-1.379536	-5.342642	-.533736	-.596760	-.712686	-5.342642
66.00	-1.410520	-5.638749	-.531606	-.592558	-.705161	-5.638749
66.50	-1.442710	-5.951732	-.529562	-.588481	-.697851	-5.951732
67.00	-1.476354	-6.315026	-.527602	-.584526	-.690750	-6.315026
67.50	-1.511346	-6.702645	-.525725	-.580691	-.683850	-6.702645
68.00	-1.547824	-7.129309	-.523930	-.576973	-.677147	-7.129309
68.50	-1.585673	-7.600598	-.522216	-.573369	-.670634	-7.600598
69.00	-1.625583	-8.123159	-.520582	-.569878	-.664306	-8.123159
69.50	-1.667050	-8.704958	-.519027	-.566496	-.658158	-8.704958
70.00	-1.710379	-9.355626	-.517551	-.563221	-.652184	-9.355626
70.50	-1.755581	-10.086900	-.516151	-.560052	-.646331	-10.086900
71.00	-1.803079	-10.913221	-.514828	-.556986	-.640742	-10.913221
71.50	-1.852701	-11.842544	-.513580	-.554021	-.635265	-11.842544
72.00	-1.904689	-12.927451	-.512408	-.551155	-.629944	-12.927451
72.50	-1.959194	-14.166719	-.511310	-.548388	-.624776	-14.166719
73.00	-2.016382	-15.607552	-.510285	-.545716	-.619756	-15.607552
73.50	-2.076430	-17.298864	-.509334	-.543138	-.614881	-17.298864
74.00	-2.139533	-19.306198	-.508455	-.540652	-.610148	-19.306198
74.50	-2.205901	-21.719341	-.507649	-.538258	-.605552	-21.719341
75.00	-2.275763	-24.664524	-.506914	-.535953	-.601091	-24.664524
75.50	-2.349369	-28.324771	-.506250	-.533736	-.596760	-28.324771
76.00	-2.426992	-32.975525	-.505657	-.531606	-.592558	-32.975525
76.50	-2.508931	-39.050865	-.505135	-.529562	-.588481	-39.050865
77.00	-2.595514	-47.275975	-.504682	-.527602	-.584526	-47.275975
77.50	-2.687099	-58.958658	-.504300	-.525725	-.580691	-58.958658
78.00	-2.784081	-76.718262	-.503988	-.523930	-.576973	-76.718262
78.50	-2.886896		-.503745	-.522216	-.573369	
79.00	-2.996025		-.503572	-.520582	-.569878	
79.50						
80.00						
80.50						
81.00	-3.507240		-.503572	-.514828	-.556986	
81.50	-3.657205		-.503745	-.513580	-.554021	
82.00	-3.817725		-.503988	-.512408	-.551155	
82.50	-3.989828	97.816830	-.504300	-.511310	-.548388	97.816830
83.00	-4.174671	87.318523	-.504682	-.510285	-.545716	87.318523

θ	R_2	R_3	R_4	R_5	R_6	R_7
83.50	-4.373565	80.588842	-.505135	-.509334	-.543138	80.588842
84.00	-4.587994	76.382792	-.505657	-.508455	-.540652	76.382792
84.50	-4.819648	74.063093	-.505250	-.507649	-.538258	74.063093
85.00	-5.070459	73.320789	-.506914	-.506914	-.535953	73.320789
85.50	-5.342642	74.063093	-.507649	-.506250	-.533736	74.063093
86.00	-5.638749	76.382792	-.508455	-.505657	-.531606	76.382792
86.50	-5.961732	80.588842	-.509334	-.505135	-.529562	80.588842
87.00	-6.315026	87.318523	-.510285	-.504682	-.527602	87.318523
87.50	-6.702645	97.816830	-.511310	-.504300	-.525725	97.816830
88.00	-7.129309		-.512408	-.503988	-.523930	
88.50	-7.600598		-.513580	-.503745	-.522216	
89.00	-8.123159		-.514828	-.503572	-.520582	
89.50	-8.704958		-.516151	-.503468	-.519027	
90.00						
90.50	-10.086900		-.519027	-.503468	-.516151	
91.00	-10.913221		-.520582	-.503572	-.514828	
91.50	-11.852544		-.522216	-.503745	-.513580	
92.00	-12.927451	-76.718262	-.523930	-.503988	-.512408	-76.718262
92.50	-14.166719	-58.958658	-.525725	-.504300	-.511310	-58.958658
93.00	-15.691552	-47.275975	-.527602	-.504682	-.510285	-47.275975
93.50	-17.298864	-39.050865	-.529562	-.505135	-.509334	-39.050865
94.00	-19.306198	-32.975525	-.531606	-.505657	-.508455	-32.975525
94.50	-21.719341	-28.324771	-.533736	-.506250	-.507649	-28.324771
95.00	-24.664524	-24.664524	-.535953	-.506914	-.506914	-24.664524
95.50	-28.324771	-21.719341	-.538258	-.507649	-.506250	-21.719341
96.00	-32.975525	-19.306198	-.540652	-.508455	-.505657	-19.306198
96.50	-39.050865	-17.298864	-.543138	-.509334	-.505135	-17.298864
97.00	-47.275975	-15.607552	-.545716	-.510285	-.504682	-15.607552
97.50	-58.958658	-14.166719	-.548388	-.511310	-.504300	-14.166719
98.00	-76.718262	-12.927451	-.551155	-.512408	-.503988	-12.927451
98.50		-11.852544	-.554021	-.513580	-.503745	-11.852544
99.00		-10.913221	-.556986	-.514828	-.503572	-10.913221
99.50		-10.086900	-.560052	-.516151	-.503468	-10.086900
100.00						
100.50						
101.00		-8.123159	-.569878	-.520582	-.503572	-8.123159
101.50		-7.600598	-.573369	-.522216	-.503745	-7.600598
102.00		-7.129309	-.576973	-.523930	-.503988	-7.129309
102.50	97.816830	-6.702645	-.580691	-.525725	-.504300	-6.702645
103.00	87.318523	-6.315026	-.584526	-.527602	-.504682	-6.315026
103.50	80.588842	-5.961732	-.588461	-.529562	-.505135	-5.961732
104.00	76.382792	-5.638749	-.592558	-.531606	-.505657	-5.638749
104.50	74.063093	-5.342642	-.596760	-.533736	-.506250	-5.342642
105.00	73.320789	-5.070459	-.601091	-.535953	-.506914	-5.070459
105.50	74.063093	-4.819648	-.605552	-.538258	-.507649	-4.819648
106.00	76.382792	-4.587994	-.610148	-.540652	-.508455	-4.587994
106.50	80.588842	-4.373565	-.614881	-.543138	-.509334	-4.373565
107.00	87.318523	-4.174671	-.619756	-.545716	-.510285	-4.174671
107.50	97.816830	-3.989828	-.624776	-.548388	-.511310	-3.989828
108.00		-3.817725	-.629944	-.551155	-.512408	-3.817725
108.50		-3.657205	-.635265	-.554021	-.513580	-3.657205
109.00		-3.507240	-.640742	-.556986	-.514828	-3.507240
109.50		-3.366914	-.646381	-.560052	-.516151	-3.366914
110.00		-3.235411	-.652184	-.563221	-.517551	-3.235411
110.50		-3.112000	-.658158	-.566496	-.519027	-3.112000
111.00		-2.996025	-.664300	-.569878	-.520582	-2.996025

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
111.50		-2.886896	-.670634	-.573369	-.522216	-2.886896
112.00	-76.718262	-2.784081	-.677147	-.576973	-.523930	-2.784081
112.50	-58.958658	-2.687099	-.683850	-.580691	-.525725	-2.687099
113.00	-47.275975	-2.595514	-.690750	-.584526	-.527602	-2.595514
113.50	-39.050865	-2.508931	-.697851	-.588481	-.529562	-2.508931
114.00	-32.975525	-2.426992	-.705161	-.592558	-.531506	-2.426992
114.50	-28.324771	-2.349369	-.712686	-.596760	-.533736	-2.349369
115.00	-24.654524	-2.275763	-.720432	-.601091	-.535953	-2.275763
115.50	-21.719341	-2.205901	-.728406	-.605552	-.538258	-2.205901
116.00	-19.306193	-2.139533	-.736616	-.610148	-.540652	-2.139533
116.50	-17.298064	-2.076430	-.745070	-.614881	-.543138	-2.076430
117.00	-15.607552	-2.016382	-.753776	-.619756	-.545716	-2.016382
117.50	-14.166719	-1.959194	-.762741	-.624776	-.548388	-1.959194
118.00	-12.927451	-1.904689	-.771975	-.629944	-.551155	-1.904689
118.50	-11.852544	-1.852701	-.781487	-.635265	-.554021	-1.852701
119.00	-10.913221	-1.803079	-.791287	-.640742	-.556986	-1.803079
119.50	-10.088900	-1.755681	-.801384	-.646381	-.560052	-1.755681
120.00	-9.355526	-1.710379	-.811789	-.652184	-.563221	-1.710379
120.50	-8.704938	-1.667050	-.822514	-.658158	-.566496	-1.667050
121.00	-8.123159	-1.625583	-.833569	-.664306	-.569878	-1.625583
121.50	-7.600598	-1.585873	-.844967	-.670634	-.573369	-1.585873
122.00	-7.129309	-1.547824	-.856720	-.677147	-.576973	-1.547824
122.50	-6.702045	-1.511346	-.868843	-.683850	-.580691	-1.511346
123.00	-6.315026	-1.476354	-.881349	-.690750	-.584526	-1.476354
123.50	-5.961732	-1.442770	-.894252	-.697851	-.588481	-1.442770
124.00	-5.638749	-1.410520	-.907568	-.705161	-.592558	-1.410520
124.50	-5.342542	-1.379535	-.921314	-.712686	-.596760	-1.379535
125.00	-5.070459	-1.349754	-.935506	-.720432	-.601091	-1.349754
125.50	-4.819548	-1.321113	-.950162	-.728406	-.605552	-1.321113
126.00	-4.587994	-1.293558	-.965302	-.736616	-.610148	-1.293558
126.50	-4.373565	-1.267035	-.980945	-.745070	-.614881	-1.267035
127.00	-4.174671	-1.241495	-.997113	-.753776	-.619756	-1.241495
127.50	-3.989828	-1.216890	-1.013827	-.762741	-.624776	-1.216890
128.00	-3.817725	-1.193178	-1.031111	-.771975	-.629944	-1.193178
128.50	-3.657205	-1.170317	-1.048990	-.781487	-.535265	-1.170317
129.00	-3.507240	-1.148268	-1.067489	-.791287	-.640742	-1.148268
129.50	-3.366914	-1.126995	-1.086637	-.801384	-.646381	-1.126995
130.00	-3.235411	-1.106462	-1.106462	-.811789	-.652184	-1.106462
130.50	-3.112000	-1.086637	-1.126995	-.822514	-.658158	-1.086637
131.00	-2.996025	-1.067489	-1.148268	-.833569	-.664306	-1.067489
131.50	-2.886896	-1.048990	-1.170317	-.844967	-.670634	-1.048990
132.00	-2.784081	-1.031111	-1.193178	-.856720	-.677147	-1.031111
132.50	-2.687099	-1.013827	-1.216890	-.868843	-.683850	-1.013827
133.00	-2.595514	-.997113	-1.241495	-.881349	-.690750	-.997113
133.50	-2.508931	-.980945	-1.267035	-.894252	-.697851	-.980945
134.00	-2.426992	-.965302	-1.293558	-.907568	-.705161	-.965302
134.50	-2.349369	-.950162	-1.321113	-.921314	-.712686	-.950162
135.00	-2.275763	-.935506	-1.349754	-.935506	-.720432	-.935506
135.50	-2.205901	-.921314	-1.379536	-.950162	-.728406	-.921314
136.00	-2.139533	-.907568	-1.410520	-.965302	-.736616	-.907568
136.50	-2.076430	-.894252	-1.442770	-.980945	-.745070	-.894252
137.00	-2.016382	-.881349	-1.476354	-.997113	-.753776	-.881349
137.50	-1.959194	-.868843	-1.511346	-1.013827	-.762741	-.868843
138.00	-1.904689	-.856720	-1.547824	-1.031111	-.771975	-.856720
138.50	-1.852701	-.844967	-1.585873	-1.048990	-.781487	-.844967
139.00	-1.803079	-.833569	-1.625583	-1.067489	-.791287	-.833569

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
139.50	-1.755081	-.822514	-1.667050	-1.086637	-.801384	-.822514
140.00	-1.710379	-.811789	-1.710379	-1.106462	-.811789	-.811789
140.50	-1.667050	-.801384	-1.755681	-1.126995	-.822514	-.801384
141.00	-1.625583	-.791287	-1.803079	-1.148268	-.833569	-.791287
141.50	-1.585873	-.781487	-1.852701	-1.170317	-.844967	-.781487
142.00	-1.547824	-.771975	-1.904689	-1.193178	-.856720	-.771975
142.50	-1.511346	-.762741	-1.959194	-1.216890	-.868843	-.762741
143.00	-1.476354	-.753776	-2.016382	-1.241495	-.881349	-.753776
143.50	-1.442770	-.745070	-2.076430	-1.267035	-.894252	-.745070
144.00	-1.410520	-.736616	-2.139533	-1.293558	-.907568	-.736616
144.50	-1.379536	-.728406	-2.205901	-1.321113	-.921314	-.728406
145.00	-1.349754	-.720432	-2.275763	-1.349754	-.935506	-.720432
145.50	-1.321113	-.712686	-2.349369	-1.379536	-.950162	-.712686
146.00	-1.293558	-.705161	-2.426992	-1.410520	-.965302	-.705161
146.50	-1.267035	-.697851	-2.508931	-1.442770	-.980945	-.697851
147.00	-1.241495	-.690750	-2.595514	-1.476354	-.997113	-.690750
147.50	-1.216890	-.683850	-2.687099	-1.511346	-1.013827	-.683850
148.00	-1.193178	-.677147	-2.784081	-1.547824	-1.031111	-.677147
148.50	-1.170317	-.670634	-2.886896	-1.585873	-1.048990	-.670634
149.00	-1.148268	-.664306	-2.996025	-1.625583	-1.067489	-.664306
149.50	-1.126995	-.658158	-3.112000	-1.667050	-1.086637	-.658158
150.00	-1.106462	-.652184	-3.235411	-1.710379	-1.106462	-.652184
150.50	-1.086637	-.646381	-3.366914	-1.755681	-1.126995	-.646381
151.00	-1.067489	-.640742	-3.507240	-1.803079	-1.148268	-.640742
151.50	-1.048990	-.635265	-3.657205	-1.852701	-1.170317	-.635265
152.00	-1.031111	-.629944	-3.817725	-1.904689	-1.193178	-.629944
152.50	-1.013827	-.624776	-3.989428	-1.959194	-1.216890	-.624776
153.00	-.997113	-.619756	-4.174671	-2.016382	-1.241495	-.619756
153.50	-.980945	-.614881	-4.373565	-2.076430	-1.267035	-.614881
154.00	-.965302	-.610148	-4.587994	-2.139533	-1.293558	-.610148
154.50	-.950162	-.605552	-4.819648	-2.205901	-1.321113	-.605552
155.00	-.935506	-.601091	-5.070459	-2.275763	-1.349754	-.601091
155.50	-.921314	-.596760	-5.342642	-2.349369	-1.379536	-.596760
156.00	-.907568	-.592558	-5.638749	-2.426992	-1.410520	-.592558
156.50	-.894252	-.588481	-5.961732	-2.508931	-1.442770	-.588481
157.00	-.881349	-.584526	-6.315026	-2.595514	-1.476354	-.584526
157.50	-.868843	-.580691	-6.702645	-2.687099	-1.511346	-.580691
158.00	-.856720	-.576973	-7.129309	-2.784081	-1.547824	-.576973
158.50	-.844967	-.573369	-7.600598	-2.886896	-1.585873	-.573369
159.00	-.833569	-.569878	-8.123159	-2.996025	-1.625583	-.569878
159.50	-.822514	-.566496	-8.704958	-3.112000	-1.667050	-.566496
160.00	-.811789	-.563221	-9.355626	-3.235411	-1.710379	-.563221
160.50	-.801384	-.560052	-10.086900	-3.366914	-1.755681	-.560052
161.00	-.791287	-.556946	-10.913221	-3.507240	-1.803079	-.556946
161.50	-.781487	-.554021	-11.852544	-3.657205	-1.852701	-.554021
162.00	-.771975	-.551155	-12.927451	-3.817725	-1.904689	-.551155
162.50	-.762741	-.548438	-14.164719	-3.989428	-1.959194	-.548438
163.00	-.753776	-.545716	-15.607552	-4.174671	-2.016382	-.545716
163.50	-.745070	-.543138	-17.294764	-4.373565	-2.076430	-.543138
164.00	-.736616	-.540652	-19.336198	-4.587994	-2.139533	-.540652
164.50	-.728406	-.538258	-21.719341	-4.819648	-2.205901	-.538258
165.00	-.720432	-.535953	-24.664524	-5.070459	-2.275763	-.535953
165.50	-.712686	-.533736	-28.324771	-5.342642	-2.349369	-.533736
166.00	-.705161	-.531506	-32.975525	-5.638749	-2.426992	-.531506
166.50	-.697851	-.529362	-39.052445	-5.961732	-2.508931	-.529362
167.00	-.690750	-.527302	-47.275775	-6.315026	-2.595514	-.527302

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
167.50	-.683350	-.525725	-58.958658	-6.702645	-2.687099	-.525725
168.00	-.677147	-.523930	-76.718262	-7.129309	-2.784081	-.523930
168.50	-.67034	-.522216		-7.600598	-2.886896	-.522216
169.00	-.664306	-.520582		-8.123159	-2.996025	-.520582
169.50	-.658158	-.519027		-8.704958	-3.112000	-.519027
170.00	-.652184	-.517551		-9.355626	-3.235411	-.517551
170.50	-.646381	-.516151		-10.086900	-3.366914	-.516151
171.00	-.640742	-.514828		-10.913221	-3.507240	-.514828
171.50	-.635205	-.513580		-11.852544	-3.657205	-.513580
172.00	-.629744	-.512408		-12.927451	-3.817725	-.512408
172.50	-.624476	-.511310	97.816830	-14.166719	-3.989828	-.511310
173.00	-.619356	-.510285	87.318523	-15.607552	-4.174671	-.510285
173.50	-.614381	-.509334	80.588842	-17.248864	-4.373565	-.509334
174.00	-.610148	-.508455	76.382792	-19.306198	-4.587994	-.508455
174.50	-.605552	-.507649	74.063093	-21.719341	-4.819648	-.507649
175.00	-.601091	-.506914	73.320789	-24.664524	-5.070459	-.506914
175.50	-.596760	-.506250	74.063093	-28.324771	-5.342642	-.506250
176.00	-.592558	-.505657	76.382792	-32.975525	-5.638749	-.505657
176.50	-.588481	-.505135	80.588842	-39.050865	-5.961732	-.505135
177.00	-.584526	-.504682	87.318523	-47.275975	-6.315026	-.504682
177.50	-.580691	-.504300	97.816830	-58.958658	-6.702645	-.504300
178.00	-.576973	-.503988		-76.718262	-7.129309	-.503988
178.50	-.573369	-.503745			-7.600598	-.503745
179.00	-.569873	-.503572			-8.123159	-.503572
179.50	-.566496	-.503468			-8.704958	-.503468
180.00						

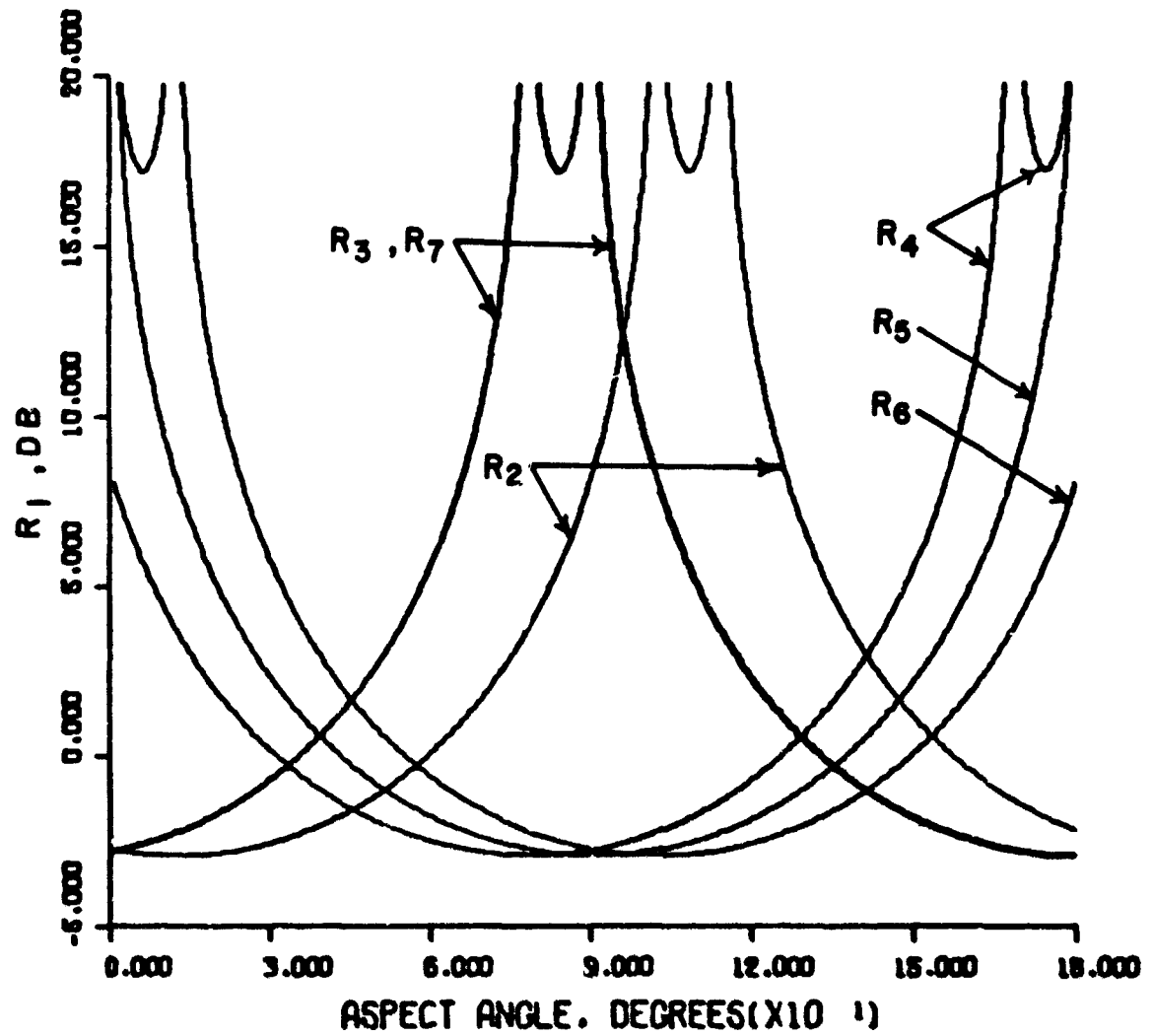


FIGURE A-6. DIFFRACTION COEFFICIENTS
 $(\alpha = 12 \text{ deg}, n = 1 + \alpha/\pi,$
 $R_1 = -0.504850)$

TABLE A-7. DIFFRACTION COEFFICIENTS
 $(\alpha = 12 \text{ deg}, n = 1 + \alpha/\pi, R_1 = 0.504850)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.523340	-.526793	-6.308469			-.526793
1.00	-.521732	-.528639	-5.954557			-.528639
1.50	-.520202	-.530567	-5.631336	-92.988420		-.530567
2.00	-.518749	-.532578	-5.335270	-67.297223	93.812318	-.532578
2.50	-.517371	-.534673	-5.063329	-52.019710	78.973255	-.534673
3.00	-.516069	-.536853	-4.812903	-41.937610	69.447115	-.536853
3.50	-.514841	-.539120	-4.581732	-34.815786	63.012135	-.539120
4.00	-.513687	-.541474	-4.367852	-29.537603	58.569809	-.541474
4.50	-.512606	-.543918	-4.169548	-25.483411	55.524167	-.543918
5.00	-.511597	-.546452	-3.985315	-22.281961	53.535176	-.546452
5.50	-.510661	-.549078	-3.813829	-19.697425	52.408546	-.549078
6.00	-.509796	-.551799	-3.653922	-17.572917	52.043434	-.551799
6.50	-.509001	-.554615	-3.504559	-15.800089	52.408546	-.554615
7.00	-.508278	-.557528	-3.366417	-14.301762	53.535176	-.557528
7.50	-.507624	-.560540	-3.233877	-13.021514	55.524167	-.560540
8.00	-.507040	-.563654	-3.111006	-11.917170	58.569809	-.563654
8.50	-.506526	-.566870	-2.995544	-10.956598	63.012135	-.566870
9.00	-.506081	-.570192	-2.886903	-10.114904	69.447115	-.570192
9.50	-.505704	-.573621	-2.784548	-9.372516	78.973255	-.573621
10.00	-.505397	-.577159	-2.688000	-8.713847	93.812318	-.577159
10.50	-.505157	-.580809	-2.596823	-8.126337		-.580809
11.00	-.504987	-.584573	-2.510623	-7.599760		-.584573
11.50	-.504884	-.588454	-2.429041	-7.125711		-.588454
12.00	-.504850	-.592455	-2.351751	-6.697221		-.592455
12.50	-.504884	-.596573	-2.278456	-6.308469		-.596573
13.00	-.504987	-.600883	-2.208883	-5.954557		-.600883
13.50	-.505157	-.605201	-2.142784	-5.631336	-92.988420	-.605201
14.00	-.505397	-.609707	-2.079931	-5.335270	-67.297223	-.609707
14.50	-.505704	-.614348	-2.020113	-5.063329	-52.019710	-.614348
15.00	-.506081	-.619127	-1.963138	-4.812903	-41.937610	-.619127
15.50	-.506526	-.624046	-1.908829	-4.581732	-34.815786	-.624046
16.00	-.507040	-.629110	-1.857022	-4.367852	-29.537603	-.629110
16.50	-.507624	-.634323	-1.807586	-4.169548	-25.483411	-.634323
17.00	-.508278	-.639688	-1.760321	-3.985315	-22.281961	-.639688
17.50	-.509001	-.645209	-1.715158	-3.813829	-19.697425	-.645209
18.00	-.509796	-.650891	-1.671955	-3.653922	-17.572917	-.650891
18.50	-.510661	-.656734	-1.630605	-3.504559	-15.800089	-.656734
19.00	-.511597	-.662755	-1.591001	-3.366417	-14.301762	-.662755
19.50	-.512606	-.668946	-1.553047	-3.233877	-13.021514	-.668946
20.00	-.513687	-.675317	-1.516655	-3.111006	-11.917170	-.675317
20.50	-.514841	-.681873	-1.481740	-2.995544	-10.956598	-.681873
21.00	-.516069	-.688619	-1.448225	-2.886903	-10.114904	-.688619
21.50	-.517371	-.695561	-1.416036	-2.784548	-9.372516	-.695561
22.00	-.518749	-.702704	-1.385106	-2.688000	-8.713847	-.702704
22.50	-.520202	-.710056	-1.355371	-2.596823	-8.126337	-.710056
23.00	-.521732	-.717621	-1.326772	-2.510623	-7.599760	-.717621
23.50	-.523340	-.725408	-1.299252	-2.429041	-7.125711	-.725408
24.00	-.525027	-.733424	-1.272759	-2.351751	-6.697221	-.733424
24.50	-.526793	-.741674	-1.247243	-2.278456	-6.308469	-.741674
25.00	-.528639	-.750165	-1.222659	-2.208883	-5.954557	-.750165
25.50	-.530567	-.758912	-1.198952	-2.142784	-5.631336	-.758912
26.00	-.532578	-.767917	-1.176112	-2.079931	-5.335270	-.767917
26.50	-.534673	-.777189	-1.154070	-2.020113	-5.063329	-.777189
27.00	-.536853	-.786739	-1.132700	-1.963138	-4.812903	-.786739

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
27.50	-.539120	-.796575	-1.112268	-1.908829	-4.581732	-.796575
28.00	-.541474	-.805709	-1.092440	-1.857022	-4.367852	-.806709
28.50	-.543918	-.817150	-1.073287	-1.807566	-4.169548	-.817150
29.00	-.546452	-.827909	-1.054719	-1.750321	-3.985315	-.827909
29.50	-.549078	-.838999	-1.036889	-1.715158	-3.813829	-.838999
30.00	-.551799	-.850430	-1.019591	-1.671956	-3.653922	-.850430
30.50	-.554615	-.862216	-1.002861	-1.630605	-3.504559	-.862216
31.00	-.557528	-.874370	-.986676	-1.591001	-3.364817	-.874370
31.50	-.560540	-.886906	-.971012	-1.553047	-3.233877	-.886906
32.00	-.563654	-.899838	-.955851	-1.516655	-3.111006	-.899838
32.50	-.566870	-.913182	-.941171	-1.481740	-2.995544	-.913182
33.00	-.570192	-.926954	-.926954	-1.448225	-2.886903	-.926954
33.50	-.573621	-.941171	-.913182	-1.416036	-2.784548	-.941171
34.00	-.577159	-.955851	-.899838	-1.385106	-2.688000	-.955851
34.50	-.580809	-.971012	-.886906	-1.355371	-2.596823	-.971012
35.00	-.584573	-.986676	-.874370	-1.326772	-2.510623	-.986676
35.50	-.588454	-1.002861	-.862216	-1.299252	-2.429041	-1.002861
36.00	-.592455	-1.019591	-.850430	-1.272759	-2.351751	-1.019591
36.50	-.596578	-1.036889	-.838999	-1.247243	-2.278456	-1.036889
37.00	-.600825	-1.054719	-.827909	-1.222659	-2.208883	-1.054719
37.50	-.605201	-1.073287	-.817150	-1.198962	-2.142784	-1.073287
38.00	-.609707	-1.092440	-.806709	-1.176112	-2.079931	-1.092440
38.50	-.614348	-1.112268	-.796575	-1.154070	-2.020113	-1.112268
39.00	-.619127	-1.132800	-.786739	-1.132800	-1.963138	-1.132800
39.50	-.624046	-1.154070	-.777189	-1.112268	-1.908829	-1.154070
40.00	-.629110	-1.176112	-.767917	-1.092440	-1.857022	-1.176112
40.50	-.634323	-1.198962	-.758912	-1.073287	-1.807566	-1.198962
41.00	-.639688	-1.222659	-.750163	-1.054719	-1.760321	-1.222659
41.50	-.645209	-1.247243	-.741674	-1.036889	-1.715158	-1.247243
42.00	-.650891	-1.272759	-.733424	-1.019591	-1.671956	-1.272759
42.50	-.656738	-1.299252	-.725408	-1.002861	-1.630605	-1.299252
43.00	-.662755	-1.326772	-.717621	-.986676	-1.591001	-1.326772
43.50	-.668946	-1.355371	-.710056	-.971012	-1.553047	-1.355371
44.00	-.675317	-1.385106	-.702774	-.955851	-1.516655	-1.385106
44.50	-.681873	-1.416036	-.695561	-.941171	-1.481740	-1.416036
45.00	-.688619	-1.448225	-.688619	-.926954	-1.448225	-1.448225
45.50	-.695551	-1.481740	-.681873	-.913182	-1.416036	-1.481740
46.00	-.702704	-1.516655	-.675317	-.899838	-1.385106	-1.516655
46.50	-.710096	-1.553047	-.668946	-.886906	-1.355371	-1.553047
47.00	-.717621	-1.591001	-.662755	-.874370	-1.326772	-1.591001
47.50	-.725308	-1.630605	-.656738	-.862216	-1.299252	-1.630605
48.00	-.733124	-1.671956	-.650891	-.850430	-1.272759	-1.671956
48.50	-.741074	-1.715158	-.645209	-.838999	-1.247243	-1.715158
49.00	-.749158	-1.760321	-.639688	-.827909	-1.222659	-1.760321
49.50	-.757372	-1.807566	-.634323	-.817150	-1.198962	-1.807566
50.00	-.765717	-1.857022	-.629110	-.806709	-1.176112	-1.857022
50.50	-.774204	-1.908829	-.624046	-.796575	-1.154070	-1.908829
51.00	-.782839	-1.963138	-.619127	-.786739	-1.132800	-1.963138
51.50	-.791635	-2.020113	-.614348	-.777189	-1.112268	-2.020113
52.00	-.800599	-2.079931	-.609707	-.767917	-1.092440	-2.079931
52.50	-.809730	-2.142784	-.605201	-.758912	-1.073287	-2.142784
53.00	-.819029	-2.208883	-.600825	-.750163	-1.054719	-2.208883
53.50	-.828499	-2.278456	-.596478	-.741674	-1.036889	-2.278456
54.00	-.838140	-2.351751	-.592255	-.733424	-1.019591	-2.351751
54.50	-.847961	-2.429041	-.588145	-.725408	-1.002861	-2.429041
55.00	-.857970	-2.510623	-.584153	-.717621	-.986676	-2.510623

<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
55.50	-0.800706	-2.596823	-0.580809	-0.710056	-0.971012	-2.596823
56.00	-0.899838	-2.688000	-0.577159	-0.702704	-0.955851	-2.688000
56.50	-0.913182	-2.784548	-0.573621	-0.695561	-0.941171	-2.784548
57.00	-0.926954	-2.886903	-0.570192	-0.688419	-0.926954	-2.886903
57.50	-0.941171	-2.995544	-0.566870	-0.681873	-0.913182	-2.995544
58.00	-0.955451	-3.111006	-0.563654	-0.675317	-0.899838	-3.111006
58.50	-0.971012	-3.233877	-0.560540	-0.668946	-0.886906	-3.233877
59.00	-0.986676	-3.364817	-0.557528	-0.662755	-0.874370	-3.364817
59.50	-1.002461	-3.504559	-0.554615	-0.656738	-0.862216	-3.504559
60.00	-1.019391	-3.653922	-0.551799	-0.650891	-0.850430	-3.653922
60.50	-1.036889	-3.813829	-0.549078	-0.645209	-0.838999	-3.813829
61.00	-1.054779	-3.985315	-0.546452	-0.639688	-0.827909	-3.985315
61.50	-1.073267	-4.169548	-0.543918	-0.634323	-0.817150	-4.169548
62.00	-1.092440	-4.367852	-0.541474	-0.629110	-0.806709	-4.367852
62.50	-1.112268	-4.581732	-0.539120	-0.624046	-0.796575	-4.581732
63.00	-1.132800	-4.812903	-0.536853	-0.619127	-0.786739	-4.812903
63.50	-1.154070	-5.063329	-0.534673	-0.614348	-0.777189	-5.063329
64.00	-1.176112	-5.335270	-0.532578	-0.609707	-0.767917	-5.335270
64.50	-1.198962	-5.631336	-0.530567	-0.605201	-0.758912	-5.631336
65.00	-1.222659	-5.954557	-0.528639	-0.600825	-0.750168	-5.954557
65.50	-1.247243	-6.308469	-0.526793	-0.596578	-0.741674	-6.308469
66.00	-1.272759	-6.697221	-0.525027	-0.592455	-0.733424	-6.697221
66.50	-1.299252	-7.125711	-0.523340	-0.588454	-0.725408	-7.125711
67.00	-1.326772	-7.599760	-0.521732	-0.584573	-0.717621	-7.599760
67.50	-1.355371	-8.126337	-0.520202	-0.580809	-0.710056	-8.126337
68.00	-1.385106	-8.713847	-0.518749	-0.577159	-0.702704	-8.713847
68.50	-1.416036	-9.372516	-0.517371	-0.573621	-0.695561	-9.372516
69.00	-1.448225	-10.114904	-0.516069	-0.570192	-0.688619	-10.114904
69.50	-1.481740	-10.956598	-0.514841	-0.566870	-0.681873	-10.956598
70.00	-1.516655	-11.917170	-0.513687	-0.563654	-0.675317	-11.917170
70.50	-1.553947	-13.021514	-0.512606	-0.560540	-0.668946	-13.021514
71.00	-1.593001	-14.301762	-0.511597	-0.557528	-0.662755	-14.301762
71.50	-1.6330605	-15.800089	-0.510661	-0.554615	-0.656738	-15.800089
72.00	-1.6741956	-17.572917	-0.509796	-0.551799	-0.650891	-17.572917
72.50	-1.715158	-19.697425	-0.509001	-0.549078	-0.645209	-19.697425
73.00	-1.760321	-22.281961	-0.508278	-0.546452	-0.639688	-22.281961
73.50	-1.807566	-25.483411	-0.507624	-0.543918	-0.634323	-25.483411
74.00	-1.857022	-29.537603	-0.507040	-0.541474	-0.629110	-29.537603
74.50	-1.908829	-34.815785	-0.506525	-0.539120	-0.624046	-34.815786
75.00	-1.963138	-41.937510	-0.506031	-0.536853	-0.619127	-41.937610
75.50	-2.020113	-52.019710	-0.505704	-0.534673	-0.614348	-52.019710
76.00	-2.079931	-67.237223	-0.505397	-0.532578	-0.609707	-67.297223
76.50	-2.142784	-92.988420	-0.505157	-0.530567	-0.605201	-92.988420
77.00	-2.209883		-0.504987	-0.528639	-0.600825	
77.50	-2.273456		-0.504844	-0.526793	-0.596578	
78.00						
78.50						
79.00	-2.510623		-0.504987	-0.521732	-0.584573	
79.50	-2.549523		-0.505157	-0.520202	-0.580809	
80.00	-2.644000	93.812318	-0.505397	-0.518749	-0.577159	93.812318
80.50	-2.744544	78.973355	-0.505704	-0.517371	-0.573621	78.973355
81.00	-2.8447115	69.447115	-0.506081	-0.516069	-0.570192	69.447115
81.50	-2.945544	63.012135	-0.506525	-0.514841	-0.566870	63.012135
82.00	-3.111006	58.569809	-0.507040	-0.513687	-0.563654	58.569809
82.50	-3.233877	55.524167	-0.507624	-0.512606	-0.560540	55.524167
83.00	-3.364817	53.535176	-0.508278	-0.511597	-0.557528	53.535176

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<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
83.50	-3.504559	52.408546	-.509001	-.510661	-.554615	52.408546
84.00	-3.653922	52.043434	-.509796	-.509796	-.551799	52.043434
84.50	-3.813829	52.408546	-.510661	-.509001	-.549078	52.408546
85.00	-3.985315	53.535176	-.511597	-.508278	-.546452	53.535176
85.50	-4.169548	55.524167	-.512606	-.507624	-.543918	55.524167
86.00	-4.357852	58.569809	-.513687	-.507040	-.541474	58.569809
86.50	-4.581732	63.012135	-.514841	-.506526	-.539120	63.012135
87.00	-4.812903	69.447115	-.516069	-.506081	-.536853	69.447115
87.50	-5.063329	78.973355	-.517371	-.505704	-.534673	78.973355
88.00	-5.335270	93.812318	-.518749	-.505397	-.532578	93.812318
88.50	-5.631336		-.520202	-.505157	-.530567	
89.00	-5.954557		-.521732	-.504987	-.528639	
89.50	-6.308459		-.523340	-.504884	-.526793	
90.00						
90.50	-7.125711		-.526793	-.504884	-.523340	
91.00	-7.599760		-.528639	-.504987	-.521732	
91.50	-8.126337	-92.988420	-.530567	-.505157	-.520202	-92.988420
92.00	-8.713847	-67.297223	-.532578	-.505397	-.518749	-67.297223
92.50	-9.372516	-52.019710	-.534673	-.505704	-.517371	-52.019710
93.00	-10.114904	-41.937610	-.536853	-.506081	-.516069	-41.937610
93.50	-10.956598	-34.815786	-.539120	-.506526	-.514841	-34.815786
94.00	-11.917170	-29.537603	-.541474	-.507040	-.513687	-29.537603
94.50	-13.021514	-25.483411	-.543918	-.507624	-.512606	-25.483411
95.00	-14.301762	-22.281961	-.546452	-.508278	-.511597	-22.281961
95.50	-15.800089	-19.697425	-.549078	-.509001	-.510661	-19.697425
96.00	-17.572917	-17.572917	-.551799	-.509796	-.509796	-17.572917
96.50	-19.697425	-15.800089	-.554615	-.510661	-.509001	-15.800089
97.00	-22.281961	-14.301762	-.557528	-.511597	-.508278	-14.301762
97.50	-25.483411	-13.021514	-.560540	-.512606	-.507624	-13.021514
98.00	-29.537603	-11.917170	-.563654	-.513687	-.507040	-11.917170
98.50	-34.815786	-10.956598	-.566870	-.514841	-.506526	-10.956598
99.00	-41.937610	-10.114904	-.570192	-.516069	-.506081	-10.114904
99.50	-52.019710	-9.372516	-.573621	-.517371	-.505704	-9.372516
100.00	-67.297223	-8.713847	-.577159	-.518749	-.505397	-8.713847
100.50	-92.988420	-8.126337	-.580809	-.520202	-.505157	-8.126337
101.00		-7.599760	-.584573	-.521732	-.504987	-7.599760
101.50		-7.125711	-.588454	-.523340	-.504884	-7.125711
102.00						
102.50						
103.00		-5.954557	-.600825	-.528639	-.504987	-5.954557
103.50		-5.631336	-.605201	-.530567	-.505157	-5.631336
104.00	93.812318	-5.335270	-.609707	-.532578	-.505397	-5.335270
104.50	78.973355	-5.063329	-.614348	-.534673	-.505704	-5.063329
105.00	69.447115	-4.812903	-.619127	-.536853	-.506081	-4.812903
105.50	63.012135	-4.581732	-.624046	-.539120	-.506526	-4.581732
106.00	58.569809	-4.367852	-.629110	-.541474	-.507040	-4.367852
106.50	55.524167	-4.169548	-.634323	-.543918	-.507624	-4.169548
107.00	53.535176	-3.985315	-.639688	-.546452	-.508278	-3.985315
107.50	52.408546	-3.813829	-.645209	-.549078	-.509001	-3.813829
108.00	52.043434	-3.653922	-.650891	-.551799	-.509796	-3.653922
108.50	52.408546	-3.504559	-.656738	-.554615	-.510661	-3.504559
109.00	53.535176	-3.364817	-.662755	-.557528	-.511597	-3.364817
109.50	55.524167	-3.233877	-.668946	-.560540	-.512606	-3.233877
110.00	58.569809	-3.111006	-.675317	-.563654	-.513687	-3.111006
110.50	63.012135	-2.995544	-.681873	-.566870	-.514841	-2.995544
111.00	69.447115	-2.886903	-.688619	-.570192	-.516069	-2.886903

θ	R_2	R_3	R_4	R_5	R_6	R_7
111.50	78.973355	-2.784548	-.695561	-.573621	-.517371	-2.784548
112.00	93.812318	-2.688000	-.702704	-.577159	-.518749	-2.688000
112.50		-2.596823	-.710056	-.580809	-.520202	-2.596823
113.00		-2.510623	-.717621	-.584573	-.521732	-2.510623
113.50		-2.429041	-.725408	-.588454	-.523340	-2.429041
114.00		-2.351751	-.733424	-.592455	-.525027	-2.351751
114.50		-2.278456	-.741674	-.596578	-.526793	-2.278456
115.00		-2.208883	-.750168	-.600825	-.528639	-2.208883
115.50	-92.988420	-2.142784	-.758912	-.605201	-.530567	-2.142784
116.00	-67.297223	-2.079931	-.767917	-.609707	-.532578	-2.079931
116.50	-52.019710	-2.020113	-.777189	-.614348	-.534673	-2.020113
117.00	-41.937610	-1.963138	-.786739	-.619127	-.536853	-1.963138
117.50	-34.815786	-1.908829	-.796575	-.624046	-.539120	-1.908829
118.00	-29.537603	-1.857022	-.806709	-.629110	-.541474	-1.857022
118.50	-25.483411	-1.807566	-.817150	-.634323	-.543918	-1.807566
119.00	-22.281961	-1.760321	-.827909	-.639688	-.546452	-1.760321
119.50	-19.677425	-1.715158	-.838999	-.645209	-.549078	-1.715158
120.00	-17.572917	-1.671956	-.850430	-.650891	-.551799	-1.671956
120.50	-15.800089	-1.630605	-.862216	-.656738	-.554615	-1.630605
121.00	-14.301762	-1.591001	-.874370	-.662755	-.557528	-1.591001
121.50	-13.021514	-1.553047	-.886906	-.668946	-.560540	-1.553047
122.00	-11.917170	-1.516655	-.899838	-.675317	-.563654	-1.516655
122.50	-10.956598	-1.481740	-.913182	-.681873	-.566870	-1.481740
123.00	-10.114904	-1.448225	-.926954	-.688619	-.570192	-1.448225
123.50	-9.372516	-1.416036	-.941171	-.695561	-.573621	-1.416036
124.00	-8.713847	-1.385106	-.955851	-.702704	-.577159	-1.385106
124.50	-8.126337	-1.355371	-.971012	-.710056	-.580809	-1.355371
125.00	-7.599760	-1.326772	-.986676	-.717621	-.584573	-1.326772
125.50	-7.125711	-1.299252	-1.002861	-.725408	-.588454	-1.299252
126.00	-6.677221	-1.272759	-1.019591	-.733424	-.592455	-1.272759
126.50	-6.308469	-1.247243	-1.036889	-.741674	-.596578	-1.247243
127.00	-5.954557	-1.222659	-1.054779	-.750168	-.600825	-1.222659
127.50	-5.631336	-1.198962	-1.073287	-.758912	-.605201	-1.198962
128.00	-5.335270	-1.176112	-1.092440	-.767917	-.609707	-1.176112
128.50	-5.063329	-1.154070	-1.112268	-.777189	-.614348	-1.154070
129.00	-4.812903	-1.132900	-1.132800	-.786739	-.619127	-1.132800
129.50	-4.581732	-1.112268	-1.154070	-.796575	-.624046	-1.112268
130.00	-4.367852	-1.092440	-1.176112	-.806709	-.629110	-1.092440
130.50	-4.169548	-1.073287	-1.198962	-.817150	-.634323	-1.073287
131.00	-3.985315	-1.054779	-1.222659	-.827909	-.639688	-1.054779
131.50	-3.813829	-1.036889	-1.247243	-.838999	-.645209	-1.036889
132.00	-3.653922	-1.019591	-1.272759	-.850430	-.650891	-1.019591
132.50	-3.504559	-1.002861	-1.299252	-.862216	-.656738	-1.002861
133.00	-3.364817	-.986676	-1.326772	-.874370	-.662755	-.986676
133.50	-3.233877	-.971012	-1.355371	-.886906	-.668946	-.971012
134.00	-3.111006	-.955851	-1.385106	-.899838	-.675317	-.955851
134.50	-2.995544	-.941171	-1.415036	-.913182	-.681873	-.941171
135.00	-2.886903	-.926954	-1.448225	-.926954	-.688619	-.926954
135.50	-2.784548	-.913182	-1.481740	-.941171	-.695561	-.913182
136.00	-2.688000	-.899838	-1.516655	-.955851	-.702704	-.899838
136.50	-2.596823	-.886906	-1.553047	-.971012	-.710056	-.886906
137.00	-2.510623	-.874370	-1.591001	-.986676	-.717621	-.874370
137.50	-2.429041	-.862216	-1.630605	-1.002861	-.725408	-.862216
138.00	-2.351751	-.850430	-1.671956	-1.019591	-.733424	-.850430
138.50	-2.278456	-.838999	-1.715158	-1.036889	-.741674	-.838999
139.00	-2.208883	-.827909	-1.760321	-1.054779	-.750168	-.827909

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
139.50	-2.142784	-.817150	-1.807566	-1.073287	-.758912	-.817150
140.00	-2.079931	-.806709	-1.857022	-1.092440	-.767917	-.806709
140.50	-2.020113	-.796575	-1.908829	-1.112268	-.777189	-.796575
141.00	-1.963138	-.786739	-1.963138	-1.132800	-.786739	-.786739
141.50	-1.908029	-.777189	-2.020113	-1.154070	-.796575	-.777189
142.00	-1.857022	-.767917	-2.079931	-1.176112	-.806709	-.767917
142.50	-1.807566	-.758912	-2.142784	-1.198962	-.817150	-.758912
143.00	-1.760321	-.750168	-2.208883	-1.222659	-.827909	-.750168
143.50	-1.715158	-.741674	-2.278456	-1.247243	-.838999	-.741674
144.00	-1.671956	-.733424	-2.351751	-1.272759	-.850430	-.733424
144.50	-1.630605	-.725408	-2.429041	-1.299252	-.862216	-.725408
145.00	-1.591001	-.717621	-2.510623	-1.326772	-.874370	-.717621
145.50	-1.553047	-.710056	-2.596823	-1.355371	-.886906	-.710056
146.00	-1.516055	-.702704	-2.688000	-1.385106	-.899838	-.702704
146.50	-1.481743	-.695561	-2.784548	-1.416036	-.913182	-.695561
147.00	-1.448225	-.688619	-2.886903	-1.448225	-.926954	-.688619
147.50	-1.416036	-.681873	-2.995544	-1.481740	-.941171	-.681873
148.00	-1.385106	-.675317	-3.111006	-1.516655	-.955851	-.675317
148.50	-1.355371	-.668946	-3.233877	-1.553047	-.971012	-.668946
149.00	-1.326772	-.662755	-3.364817	-1.591001	-.986676	-.662755
149.50	-1.299252	-.656738	-3.504559	-1.630605	-1.002861	-.656738
150.00	-1.272759	-.650891	-3.653922	-1.671956	-1.019591	-.650891
150.50	-1.247243	-.645209	-3.813829	-1.715158	-1.036889	-.645209
151.00	-1.222659	-.639688	-3.985315	-1.760321	-1.054779	-.639688
151.50	-1.198962	-.634323	-4.169548	-1.807566	-1.073287	-.634323
152.00	-1.176112	-.629110	-4.367852	-1.857022	-1.092440	-.629110
152.50	-1.154070	-.624046	-4.581732	-1.908829	-1.112268	-.624046
153.00	-1.132800	-.619127	-4.812903	-1.963138	-1.132800	-.619127
153.50	-1.112268	-.614348	-5.063329	-2.020113	-1.154070	-.614348
154.00	-1.092440	-.609707	-5.335270	-2.079931	-1.176112	-.609707
154.50	-1.073287	-.605201	-5.631336	-2.142784	-1.198962	-.605201
155.00	-1.054779	-.600825	-5.954557	-2.208883	-1.222659	-.600825
155.50	-1.036889	-.596578	-6.308469	-2.278456	-1.247243	-.596578
156.00	-1.019591	-.592455	-6.697221	-2.351751	-1.272759	-.592455
156.50	-1.002861	-.588454	-7.125711	-2.429041	-1.299252	-.588454
157.00	-.986676	-.584573	-7.599760	-2.510623	-1.326772	-.584573
157.50	-.971012	-.580809	-8.126337	-2.596823	-1.355371	-.580809
158.00	-.955851	-.577159	-8.713847	-2.688000	-1.385106	-.577159
158.50	-.941171	-.573621	-9.372516	-2.784548	-1.416036	-.573621
159.00	-.926954	-.570192	-10.114904	-2.886903	-1.448225	-.570192
159.50	-.913182	-.566870	-10.956598	-2.995544	-1.481740	-.566870
160.00	-.899838	-.563654	-11.917170	-3.111006	-1.516655	-.563654
160.50	-.886906	-.560540	-13.021514	-3.233877	-1.553047	-.560540
161.00	-.874370	-.557528	-14.301762	-3.364817	-1.591001	-.557528
161.50	-.862216	-.554615	-15.800089	-3.504559	-1.630605	-.554615
162.00	-.850430	-.551799	-17.572917	-3.653922	-1.671956	-.551799
162.50	-.838999	-.549078	-19.697425	-3.813829	-1.715158	-.549078
163.00	-.827909	-.546452	-22.281961	-3.985315	-1.760321	-.546452
163.50	-.817150	-.543918	-25.483411	-4.169548	-1.807566	-.543918
164.00	-.806709	-.541474	-29.537603	-4.367852	-1.857022	-.541474
164.50	-.796575	-.539120	-34.815786	-4.581732	-1.908829	-.539120
165.00	-.786739	-.536853	-41.937610	-4.812903	-1.963138	-.536853
165.50	-.777189	-.534673	-52.019710	-5.063329	-2.020113	-.534673
166.00	-.767917	-.532578	-67.297223	-5.335270	-2.079931	-.532578
166.50	-.758912	-.530567	-92.988420	-5.631336	-2.142784	-.530567
167.00	-.750168	-.528639		-5.954557	-2.208883	-.528639

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<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
167.50	-.741674	-.526793		-6.308469	-2.278456	-.526793
168.00	-.733424	-.525027		-6.697221	-2.351751	-.525027
168.50	-.725408	-.523340		-7.125711	-2.429041	-.523340
169.00	-.717521	-.521732		-7.599760	-2.510623	-.521732
169.50	-.710056	-.520202		-8.126337	-2.596823	-.520202
170.00	-.702704	-.518749	93.812318	-8.713847	-2.688000	-.518749
170.50	-.695501	-.517371	78.973355	-9.372516	-2.784548	-.517371
171.00	-.688619	-.516069	69.447115	-10.114904	-2.886903	-.516069
171.50	-.681873	-.514841	63.012135	-10.956598	-2.995544	-.514841
172.00	-.675317	-.513687	58.569809	-11.917170	-3.111006	-.513687
172.50	-.668946	-.512606	55.524167	-13.021514	-3.233877	-.512606
173.00	-.662755	-.511597	53.535176	-14.301762	-3.364817	-.511597
173.50	-.656738	-.510661	52.408546	-15.800089	-3.504559	-.510661
174.00	-.650891	-.509796	52.043434	-17.572917	-3.653922	-.509796
174.50	-.645209	-.509001	52.408546	-19.697425	-3.813829	-.509001
175.00	-.639688	-.508278	53.535176	-22.281961	-3.985315	-.508278
175.50	-.634323	-.507624	55.524167	-25.483411	-4.169548	-.507624
176.00	-.629110	-.507040	58.569809	-29.537603	-4.367852	-.507040
176.50	-.624046	-.506526	63.012135	-34.815786	-4.581732	-.506526
177.00	-.619127	-.506081	69.447115	-41.937610	-4.812903	-.506081
177.50	-.614348	-.505704	78.973355	-52.019710	-5.063329	-.505704
178.00	-.609707	-.505397	93.812318	-67.297223	-5.335270	-.505397
178.50	-.605201	-.505157		-92.988420	-5.631336	-.505157
179.00	-.600825	-.504987			-5.954557	-.504987
179.50	-.596578	-.504884			-6.308469	-.504884
180.00						

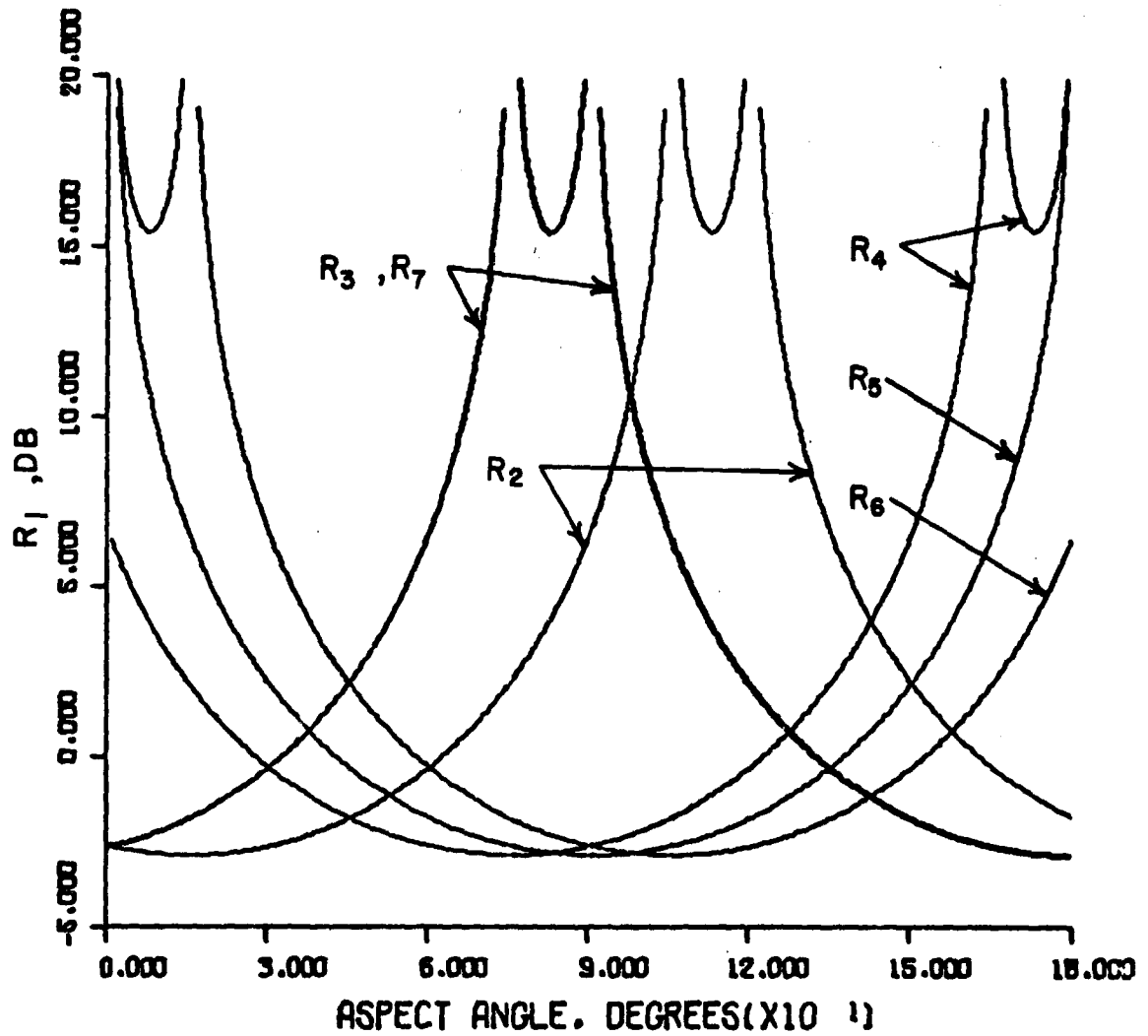


FIGURE A-7. DIFFRACTION COEFFICIENTS
 $(\alpha = 15 \text{ deg}, n = 1 + \alpha/\pi,$
 $R_1 = -0.507372)$

TABLE A-8. DIFFRACTION COEFFICIENTS
 $(\alpha = 15 \text{ deg}, n = 1 + \alpha/\pi, R_1 = -0.507372)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.536547	-.540892	-4.287960			-.540892
1.00	-.534499	-.543193	-4.095295			-.543193
1.50	-.532533	-.545580	-3.916303	-78.765038	95.892827	-.545580
2.00	-.530648	-.548056	-3.749689	-57.382422	74.648483	-.548056
2.50	-.528843	-.550621	-3.594311	-44.632146	62.079238	-.550621
3.00	-.527116	-.553277	-3.449156	-36.192539	53.866012	-.553277
3.50	-.525466	-.556027	-3.313330	-30.211965	48.160527	-.556027
4.00	-.523894	-.558871	-3.186031	-25.764994	44.041600	-.558871
4.50	-.522397	-.561811	-3.066548	-22.337799	41.000717	-.561811
5.00	-.520975	-.564849	-2.954241	-19.622320	38.736432	-.564849
5.50	-.519627	-.567987	-2.848537	-17.422708	37.061119	-.567987
6.00	-.518353	-.571227	-2.748919	-15.608548	35.854619	-.571227
6.50	-.517151	-.574572	-2.654923	-14.089680	35.039628	-.574572
7.00	-.516022	-.578022	-2.566126	-12.801803	34.568097	-.578022
7.50	-.514964	-.581580	-2.482147	-11.697850	34.413715	-.581580
8.00	-.513977	-.585250	-2.402639	-10.742591	34.568097	-.585250
8.50	-.513060	-.589032	-2.327286	-9.909146	35.039628	-.589032
9.00	-.512213	-.592930	-2.255801	-9.176657	35.854619	-.592930
9.50	-.511436	-.596945	-2.187920	-8.528701	37.061119	-.596945
10.00	-.510727	-.601082	-2.123405	-7.952177	38.736432	-.601082
10.50	-.510087	-.605342	-2.062033	-7.436510	41.000717	-.605342
11.00	-.509516	-.609729	-2.003602	-6.973076	44.041600	-.609729
11.50	-.509012	-.614246	-1.947927	-6.554774	48.160527	-.614246
12.00	-.508576	-.618895	-1.894836	-6.175705	53.866012	-.618895
12.50	-.508208	-.623680	-1.844170	-5.830936	62.079238	-.623680
13.00	-.507907	-.628604	-1.795785	-5.516305	74.648483	-.628604
13.50	-.507672	-.633672	-1.749545	-5.228281	95.892827	-.633672
14.00	-.507505	-.638886	-1.705325	-4.963450		-.638886
14.50	-.507405	-.644251	-1.663309	-4.720426		-.644251
15.00	-.507372	-.649770	-1.622489	-4.495775		-.649770
15.50	-.507405	-.655448	-1.583666	-4.287960		-.655448
16.00	-.507505	-.661289	-1.546447	-4.095295		-.661289
16.50	-.507672	-.667297	-1.510746	-3.916303	-78.765038	-.667297
17.00	-.507907	-.673478	-1.476480	-3.749689	-57.382422	-.673478
17.50	-.508208	-.679837	-1.443576	-3.594311	-44.632146	-.679837
18.00	-.508576	-.686377	-1.411962	-3.449156	-36.192539	-.686377
18.50	-.509012	-.693105	-1.381573	-3.313330	-30.211965	-.693105
19.00	-.509516	-.700027	-1.352347	-3.186031	-25.764994	-.700027
19.50	-.510087	-.707147	-1.324227	-3.066548	-22.337799	-.707147
20.00	-.510727	-.714472	-1.297158	-2.954241	-19.622320	-.714472
20.50	-.511436	-.722009	-1.271090	-2.848537	-17.422708	-.722009
21.00	-.512213	-.729764	-1.245974	-2.748919	-15.608548	-.729764
21.50	-.513060	-.737743	-1.221767	-2.654923	-14.089680	-.737743
22.00	-.513977	-.745955	-1.198425	-2.566126	-12.801803	-.745955
22.50	-.514964	-.754406	-1.175910	-2.482147	-11.697850	-.754406
23.00	-.516022	-.763104	-1.154184	-2.402639	-10.742591	-.763104
23.50	-.517151	-.772058	-1.133210	-2.327286	-9.909146	-.772058
24.00	-.518353	-.781275	-1.112957	-2.255801	-9.176657	-.781275
24.50	-.519627	-.790766	-1.093393	-2.187920	-8.528701	-.790766
25.00	-.520975	-.800538	-1.074488	-2.123405	-7.952177	-.800538
25.50	-.522397	-.810603	-1.056214	-2.062033	-7.436510	-.810603
26.00	-.523894	-.820970	-1.038544	-2.003602	-6.973076	-.820970
26.50	-.525466	-.831650	-1.021453	-1.947927	-6.554774	-.831650
27.00	-.527116	-.842654	-1.004919	-1.894836	-6.175705	-.842654

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θ	R_2	R_3	R_4	R_5	R_6	R_7
27.50	-.528843	-.853995	-.988916	-1.844170	-5.830936	-.853995
28.00	-.530648	-.865683	-.973426	-1.795785	-5.516305	-.865683
28.50	-.532533	-.877733	-.958427	-1.749545	-5.228281	-.877733
29.00	-.534499	-.890157	-.943899	-1.705325	-4.963850	-.890157
29.50	-.536547	-.902971	-.929826	-1.663009	-4.720426	-.902971
30.00	-.538678	-.916188	-.916188	-1.622489	-4.495775	-.916188
30.50	-.540892	-.929826	-.902971	-1.583666	-4.287960	-.929826
31.00	-.543193	-.943899	-.890157	-1.546447	-4.095295	-.943899
31.50	-.545580	-.958427	-.877733	-1.510746	-3.916303	-.958427
32.00	-.548056	-.973426	-.865683	-1.476480	-3.749689	-.973426
32.50	-.550621	-.988916	-.853995	-1.443576	-3.594311	-.988916
33.00	-.553277	-1.004919	-.842654	-1.411962	-3.449156	-1.004919
33.50	-.556027	-1.021453	-.831650	-1.381573	-3.313330	-1.021453
34.00	-.558871	-1.038544	-.820970	-1.352347	-3.186031	-1.038544
34.50	-.561811	-1.056214	-.810603	-1.324227	-3.066548	-1.056214
35.00	-.564849	-1.074488	-.800538	-1.297158	-2.954241	-1.074488
35.50	-.567987	-1.093393	-.790766	-1.271090	-2.848537	-1.093393
36.00	-.571227	-1.112957	-.781275	-1.245974	-2.748919	-1.112957
36.50	-.574572	-1.133210	-.772058	-1.221767	-2.654923	-1.133210
37.00	-.578022	-1.154184	-.763104	-1.198425	-2.566126	-1.154184
37.50	-.581580	-1.175910	-.754406	-1.175910	-2.482147	-1.175910
38.00	-.585250	-1.198425	-.745955	-1.154184	-2.402639	-1.198425
38.50	-.589032	-1.221767	-.737743	-1.133210	-2.327246	-1.221767
39.00	-.592930	-1.245974	-.729764	-1.112957	-2.255801	-1.245974
39.50	-.596945	-1.271090	-.722009	-1.093393	-2.187920	-1.271090
40.00	-.601082	-1.297158	-.714472	-1.074488	-2.123405	-1.297158
40.50	-.605342	-1.324227	-.707147	-1.056214	-2.062033	-1.324227
41.00	-.609729	-1.352347	-.700027	-1.038544	-2.003602	-1.352347
41.50	-.614246	-1.381573	-.693105	-1.021453	-1.947927	-1.381573
42.00	-.618895	-1.411962	-.686377	-1.004919	-1.894836	-1.411962
42.50	-.623680	-1.443576	-.679837	-.988916	-1.844170	-1.443576
43.00	-.628604	-1.476480	-.673478	-.973426	-1.795785	-1.476480
43.50	-.633672	-1.510746	-.667297	-.958427	-1.749545	-1.510746
44.00	-.638886	-1.546447	-.661289	-.943899	-1.705325	-1.546447
44.50	-.644251	-1.583666	-.655448	-.929826	-1.663009	-1.583666
45.00	-.649770	-1.622489	-.649770	-.916188	-1.622489	-1.622489
45.50	-.655448	-1.663009	-.644251	-.902971	-1.583666	-1.663009
46.00	-.661289	-1.705325	-.638886	-.890157	-1.546447	-1.705325
46.50	-.667297	-1.749545	-.633672	-.877733	-1.510746	-1.749545
47.00	-.673478	-1.795785	-.628604	-.865683	-1.476480	-1.795785
47.50	-.679837	-1.844170	-.623680	-.853995	-1.443576	-1.844170
48.00	-.686377	-1.894836	-.618895	-.842654	-1.411962	-1.894836
48.50	-.693105	-1.947927	-.614246	-.831650	-1.381573	-1.947927
49.00	-.700027	-2.003602	-.609729	-.820970	-1.352347	-2.003602
49.50	-.707147	-2.062033	-.605342	-.810603	-1.324227	-2.062033
50.00	-.714472	-2.123405	-.601082	-.800538	-1.297158	-2.123405
50.50	-.722009	-2.187920	-.596945	-.790766	-1.271090	-2.187920
51.00	-.729793	-2.255801	-.592930	-.781275	-1.245974	-2.255801
51.50	-.737943	-2.327286	-.589032	-.772058	-1.221767	-2.327286
52.00	-.746355	-2.402639	-.585250	-.763104	-1.198425	-2.402639
52.50	-.754976	-2.482147	-.581580	-.754406	-1.175910	-2.482147
53.00	-.763804	-2.566126	-.578022	-.745955	-1.154184	-2.566126
53.50	-.772858	-2.654923	-.574572	-.737743	-1.133210	-2.654923
54.00	-.782129	-2.749619	-.571227	-.729764	-1.112957	-2.749619
54.50	-.791664	-2.848537	-.567987	-.722009	-1.093393	-2.848537
55.00	-.801538	-2.954241	-.564849	-.714472	-1.074488	-2.954241

θ	R_2	R_3	R_4	R_5	R_6	R_7
55.50	-.810603	-3.066548	-.561811	-.707147	-1.056214	-3.066548
56.00	-.820970	-3.186031	-.558871	-.700027	-1.038544	-3.186031
56.50	-.831650	-3.313330	-.556027	-.693105	-1.021453	-3.313330
57.00	-.842654	-3.449156	-.553277	-.686377	-1.004919	-3.449156
57.50	-.853995	-3.594311	-.550621	-.679837	-.988916	-3.594311
58.00	-.865683	-3.749689	-.548056	-.673478	-.973426	-3.749689
58.50	-.877733	-3.916303	-.545580	-.667297	-.958427	-3.916303
59.00	-.890157	-4.095295	-.543193	-.661289	-.943899	-4.095295
59.50	-.902971	-4.287960	-.540892	-.655448	-.929826	-4.287960
60.00	-.916188	-4.495775	-.538678	-.649770	-.916188	-4.495775
60.50	-.929826	-4.720426	-.536547	-.644251	-.902971	-4.720426
61.00	-.943979	-4.963850	-.534499	-.638886	-.890157	-4.963850
61.50	-.958627	-5.228281	-.532533	-.633672	-.877733	-5.228281
62.00	-.973826	-5.516305	-.530648	-.628604	-.865683	-5.516305
62.50	-.9895916	-5.830936	-.528843	-.623680	-.853995	-5.830936
63.00	-1.004919	-6.175705	-.527116	-.618895	-.842654	-6.175705
63.50	-1.021453	-6.554774	-.525466	-.614246	-.831650	-6.554774
64.00	-1.038544	-6.973076	-.523894	-.609729	-.820970	-6.973076
64.50	-1.056214	-7.436510	-.522397	-.605342	-.810603	-7.436510
65.00	-1.074488	-7.952177	-.520975	-.601082	-.800538	-7.952177
65.50	-1.093393	-8.528701	-.519627	-.596945	-.790766	-8.528701
66.00	-1.112957	-9.176657	-.518353	-.592930	-.781275	-9.176657
66.50	-1.133210	-9.909146	-.517151	-.589032	-.772058	-9.909146
67.00	-1.154184	-10.742591	-.516022	-.585250	-.763104	-10.742591
67.50	-1.175910	-11.69785	-.514964	-.581580	-.754406	-11.697850
68.00	-1.198425	-12.801803	-.513977	-.578022	-.745955	-12.801803
68.50	-1.221767	-14.049680	-.513060	-.574572	-.737743	-14.049680
69.00	-1.245974	-15.608548	-.512213	-.571227	-.729764	-15.608548
69.50	-1.271090	-17.422708	-.511436	-.567987	-.722009	-17.422708
70.00	-1.297158	-19.622320	-.510727	-.564849	-.714472	-19.622320
70.50	-1.324227	-22.337799	-.510087	-.561811	-.707147	-22.337799
71.00	-1.352347	-25.764994	-.509516	-.558871	-.700027	-25.764994
71.50	-1.381573	-30.211965	-.509012	-.556027	-.693105	-30.211965
72.00	-1.411952	-36.192539	-.508576	-.553277	-.686377	-36.192539
72.50	-1.443576	-44.632146	-.508208	-.550621	-.679837	-44.632146
73.00	-1.476480	-57.392422	-.507907	-.548056	-.673478	-57.392422
73.50	-1.510746	-78.765038	-.507672	-.545580	-.667297	-78.765038
74.00	-1.546447		-.507505	-.543193	-.661289	
74.50	-1.583666		-.507405	-.540892	-.655448	
75.00						
75.50						
76.00	-1.705325	95.892827	-.507505	-.534499	-.638886	95.892827
76.50	-1.744945	74.644443	-.507572	-.532533	-.633672	74.644443
77.00	-1.795145	62.079238	-.507907	-.530448	-.628604	62.079238
77.50	-1.856170	53.846012	-.508208	-.528443	-.623680	53.846012
78.00	-1.929436	48.160527	-.508576	-.527116	-.618895	48.160527
78.50	-1.994927	44.041600	-.509012	-.525466	-.614246	44.041600
79.00	-2.063502	41.000717	-.509516	-.523894	-.609729	41.000717
79.50	-2.135405	38.736432	-.510087	-.522397	-.605342	38.736432
80.00	-2.211720	37.061119	-.510727	-.520975	-.601082	37.061119
80.50	-2.292501	35.854619	-.511436	-.519627	-.596945	35.854619
81.00	-2.377766	35.039628	-.512213	-.518353	-.592930	35.039628
81.50	-2.467439	34.568047	-.513060	-.517151	-.589032	34.568047
82.00	-2.561515	34.413715	-.513977	-.516022	-.585250	34.413715
82.50	-2.660097	34.568047	-.514964	-.514964	-.581580	34.568047
83.00	-2.763284		-.516022	-.513977	-.578022	

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
83.50	-2.654923	35.039628	-.517151	-.513060	-.574572	35.039628
84.00	-2.749919	35.854619	-.518353	-.512213	-.571227	35.854619
84.50	-2.844537	37.061119	-.519627	-.511436	-.567987	37.061119
85.00	-2.934241	38.736432	-.520975	-.510727	-.564849	38.736432
85.50	-3.025348	41.007717	-.522397	-.510087	-.561811	41.007717
86.00	-3.1186031	44.041600	-.523894	-.509516	-.558871	44.041600
86.50	-3.213330	48.160527	-.525466	-.508012	-.556027	48.160527
87.00	-3.311556	53.865012	-.527116	-.506576	-.553277	53.866012
87.50	-3.41311	62.079238	-.528843	-.505208	-.550621	62.079238
88.00	-3.517669	74.648483	-.530648	-.507907	-.548056	74.648483
88.50	-3.616303	95.892827	-.532533	-.507672	-.545580	95.892827
89.00	-4.075295		-.534499	-.507505	-.543193	
89.50	-4.207760		-.536547	-.507405	-.540892	
90.00						
90.50	-4.720426		-.540892	-.507405	-.536547	
91.00	-4.953050		-.543193	-.507505	-.534499	
91.50	-5.228241	-78.765038	-.545580	-.507672	-.532533	-78.765038
92.00	-5.516305	-57.382422	-.548056	-.507907	-.530648	-57.382422
92.50	-5.8130936	-44.632146	-.550621	-.508208	-.528843	-44.632146
93.00	-6.1175705	-36.192539	-.553277	-.508576	-.527116	-36.192539
93.50	-6.554774	-30.211965	-.556027	-.509012	-.525466	-30.211965
94.00	-6.973076	-25.764994	-.558871	-.509516	-.523894	-25.764994
94.50	-7.436510	-22.337799	-.561811	-.510087	-.522397	-22.337799
95.00	-7.952177	-19.622320	-.564849	-.510727	-.520975	-19.622320
95.50	-8.528701	-17.422708	-.567987	-.511436	-.519627	-17.422708
96.00	-9.176057	-15.608548	-.571227	-.512213	-.518353	-15.608548
96.50	-9.907146	-14.099680	-.574572	-.513060	-.517151	-14.089680
97.00	-10.742591	-12.801803	-.578322	-.513977	-.516022	-12.301803
97.50	-11.697350	-11.677850	-.581580	-.514964	-.514964	-11.697850
98.00	-12.401803	-10.742591	-.585250	-.516022	-.513977	-10.742591
98.50	-14.089680	-9.907146	-.589032	-.517151	-.513060	-9.909146
99.00	-15.608548	-9.176657	-.592930	-.518353	-.512213	-9.176657
99.50	-17.422708	-8.528701	-.596945	-.519627	-.511436	-8.528701
100.00	-19.622320	-7.952177	-.601002	-.520975	-.510727	-7.952177
100.50	-22.337799	-7.436510	-.605342	-.522397	-.510087	-7.436510
101.00	-25.764994	-6.973076	-.609729	-.523894	-.509516	-6.973076
101.50	-30.211965	-6.554774	-.614246	-.525466	-.509012	-6.554774
102.00	-36.192539	-6.1175705	-.618495	-.527116	-.508576	-6.175705
102.50	-44.632146	-5.8130936	-.623680	-.528843	-.508208	-5.830936
103.00	-57.382422	-5.516305	-.628604	-.530648	-.507907	-5.516305
103.50	-78.765038	-5.228781	-.633672	-.532533	-.507672	-5.228241
104.00		-4.953450	-.638406	-.534499	-.507505	-4.963450
104.50		-4.720426	-.644251	-.536547	-.507405	-4.720426
105.00						
105.50		-4.287960	-.655448	-.540592	-.507405	-4.287960
106.00		-4.095295	-.661289	-.543193	-.507505	-4.095295
106.50	95.892827	-3.916303	-.667297	-.545580	-.507672	-3.916303
107.00	74.648483	-3.749689	-.673478	-.548056	-.507907	-3.749689
107.50	62.079238	-3.594311	-.679837	-.550621	-.508208	-3.594311
108.00	53.866012	-3.449156	-.686377	-.553277	-.508576	-3.449156
108.50	48.160527	-3.313330	-.693105	-.556027	-.509012	-3.313330
109.00	44.041600	-3.186031	-.700027	-.558871	-.509516	-3.186031
109.50	41.007717	-3.066548	-.707147	-.561811	-.510087	-3.066548
110.00	38.736432	-2.954241	-.714472	-.564849	-.510727	-2.954241
110.50	37.061119	-2.844537	-.722009	-.567987	-.511436	-2.844537
111.00	35.854619	-2.749919	-.729764	-.571227	-.512213	-2.749919

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θ	R_2	R_3	R_4	R_5	R_6	R_7
111.50	35.039628	-2.654923	-.737743	-.574572	-.513060	-2.654923
112.00	34.568097	-2.566126	-.745955	-.578022	-.513977	-2.566126
112.50	34.413715	-2.482147	-.754406	-.581580	-.514964	-2.482147
113.00	34.568097	-2.402639	-.763104	-.585250	-.516022	-2.402639
113.50	35.039628	-2.327286	-.772058	-.589032	-.517151	-2.327286
114.00	35.854019	-2.255801	-.781275	-.592930	-.518353	-2.255801
114.50	37.061119	-2.187920	-.790766	-.596945	-.519627	-2.187920
115.00	38.736432	-2.123405	-.800538	-.601082	-.520975	-2.123405
115.50	41.000717	-2.062033	-.810603	-.605342	-.522397	-2.062033
116.00	44.041600	-2.003602	-.820970	-.609729	-.523894	-2.003602
116.50	48.160527	-1.947927	-.831650	-.614246	-.525466	-1.947927
117.00	53.866012	-1.894836	-.842654	-.618895	-.527116	-1.894836
117.50	62.079238	-1.844170	-.853995	-.623680	-.528843	-1.844170
118.00	74.649483	-1.795785	-.865683	-.628604	-.530648	-1.795785
118.50	95.892827	-1.749545	-.877733	-.633672	-.532533	-1.749545
119.00		-1.705325	-.890157	-.638886	-.534499	-1.705325
119.50		-1.663009	-.902971	-.644251	-.536547	-1.663009
120.00		-1.622489	-.916188	-.649770	-.538678	-1.622489
120.50		-1.583666	-.929826	-.655448	-.540892	-1.583666
121.00		-1.546447	-.943899	-.661289	-.543193	-1.546447
121.50	-78.765038	-1.510746	-.958427	-.667297	-.545580	-1.510746
122.00	-57.382422	-1.476480	-.973426	-.673478	-.548056	-1.476480
122.50	-44.632146	-1.443576	-.988916	-.679937	-.550621	-1.443576
123.00	-36.192539	-1.411962	-1.004919	-.686637	-.553277	-1.411962
123.50	-30.211965	-1.381573	-1.021453	-.693105	-.556027	-1.381573
124.00	-25.764994	-1.352347	-1.038544	-.700027	-.558871	-1.352347
124.50	-22.337799	-1.324227	-1.056214	-.707147	-.561811	-1.324227
125.00	-19.622520	-1.297158	-1.074488	-.714472	-.564849	-1.297158
125.50	-17.422708	-1.271090	-1.093393	-.722009	-.567987	-1.271090
126.00	-15.608548	-1.245974	-1.112957	-.729764	-.571227	-1.245974
126.50	-14.039580	-1.221767	-1.133210	-.737743	-.574572	-1.221767
127.00	-12.801803	-1.198425	-1.154194	-.745955	-.578022	-1.198425
127.50	-11.677850	-1.175910	-1.175910	-.754406	-.581580	-1.175910
128.00	-10.742591	-1.154184	-1.198425	-.763104	-.585250	-1.154184
128.50	-9.909146	-1.133210	-1.221767	-.772058	-.589032	-1.133210
129.00	-9.176657	-1.112957	-1.245974	-.781275	-.592930	-1.112957
129.50	-8.528701	-1.093393	-1.271090	-.790766	-.596945	-1.093393
130.00	-7.952177	-1.074488	-1.297158	-.800538	-.601082	-1.074488
130.50	-7.436510	-1.056214	-1.324227	-.810603	-.605342	-1.056214
131.00	-6.973076	-1.038544	-1.352347	-.820970	-.609729	-1.038544
131.50	-6.554774	-1.021453	-1.381573	-.831650	-.614246	-1.021453
132.00	-6.175705	-1.004919	-1.411962	-.842654	-.618895	-1.004919
132.50	-5.830936	-.988916	-1.443576	-.853995	-.623680	-.988916
133.00	-5.516305	-.973426	-1.476480	-.865683	-.628604	-.973426
133.50	-5.228281	-.958427	-1.510746	-.877733	-.633672	-.958427
134.00	-4.963850	-.943899	-1.546447	-.890157	-.638886	-.943899
134.50	-4.720426	-.929826	-1.583666	-.902971	-.644251	-.929826
135.00	-4.495775	-.916188	-1.622489	-.916188	-.649770	-.916188
135.50	-4.287960	-.902971	-1.663009	-.929826	-.655448	-.902971
136.00	-4.095295	-.890157	-1.705325	-.943899	-.661289	-.890157
136.50	-3.916303	-.877733	-1.749545	-.958427	-.667297	-.877733
137.00	-3.749559	-.865683	-1.795785	-.973426	-.673478	-.865683
137.50	-3.593311	-.853995	-1.844170	-.988916	-.679937	-.853995
138.00	-3.449155	-.842654	-1.894836	-1.004919	-.686637	-.842654
138.50	-3.313330	-.831650	-1.947927	-1.021453	-.693105	-.831650
139.00	-3.186031	-.820970	-2.003602	-1.038544	-.700027	-.820970

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<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
139.50	-3.066548	-.810603	-2.062033	-1.056214	-.707147	-.810603
140.00	-2.954241	-.800538	-2.123405	-1.074488	-.714472	-.800538
140.50	-2.848537	-.790766	-2.187920	-1.093393	-.722009	-.790766
141.00	-2.748919	-.781275	-2.255801	-1.112957	-.729764	-.781275
141.50	-2.654923	-.772058	-2.327286	-1.133210	-.737743	-.772058
142.00	-2.566125	-.763104	-2.402639	-1.154184	-.745955	-.763104
142.50	-2.482147	-.754406	-2.482147	-1.175910	-.754406	-.754406
143.00	-2.402639	-.745955	-2.566126	-1.198425	-.763104	-.745955
143.50	-2.327286	-.737743	-2.654923	-1.221767	-.772058	-.737743
144.00	-2.255801	-.729764	-2.748919	-1.245974	-.781275	-.729764
144.50	-2.187920	-.722009	-2.848537	-1.271090	-.790766	-.722009
145.00	-2.123405	-.714472	-2.954241	-1.297158	-.800538	-.714472
145.50	-2.062033	-.707147	-3.066548	-1.324227	-.810603	-.707147
146.00	-2.003602	-.700027	-3.186031	-1.352347	-.820970	-.700027
146.50	-1.947927	-.693105	-3.313330	-1.381573	-.831650	-.693105
147.00	-1.894836	-.686377	-3.449156	-1.411962	-.842654	-.686377
147.50	-1.844170	-.679837	-3.594311	-1.443576	-.853995	-.679837
148.00	-1.795785	-.673478	-3.749689	-1.476480	-.865683	-.673478
148.50	-1.749545	-.667297	-3.916303	-1.510746	-.877733	-.667297
149.00	-1.705325	-.661289	-4.095295	-1.546447	-.890157	-.661289
149.50	-1.663009	-.655448	-4.287960	-1.583666	-.902971	-.655448
150.00	-1.622489	-.649770	-4.495775	-1.622489	-.916188	-.649770
150.50	-1.583666	-.644251	-4.720426	-1.663009	-.929826	-.644251
151.00	-1.546447	-.638886	-4.963850	-1.705325	-.943899	-.638886
151.50	-1.510746	-.633672	-5.228281	-1.749545	-.958427	-.633672
152.00	-1.476480	-.628604	-5.516305	-1.795785	-.973426	-.628604
152.50	-1.443576	-.623680	-5.830936	-1.844170	-.988916	-.623680
153.00	-1.411962	-.618895	-6.175705	-1.894836	-1.004919	-.618895
153.50	-1.381573	-.614246	-6.554774	-1.947927	-1.021453	-.614246
154.00	-1.352347	-.609729	-6.973076	-2.003602	-1.038544	-.609729
154.50	-1.324227	-.605342	-7.430510	-2.062033	-1.056214	-.605342
155.00	-1.297158	-.601082	-7.952177	-2.123405	-1.074488	-.601082
155.50	-1.271090	-.596945	-8.528701	-2.187920	-1.093393	-.596945
156.00	-1.245974	-.592930	-9.176657	-2.255801	-1.112957	-.592930
156.50	-1.221767	-.589032	-9.909146	-2.327286	-1.133210	-.589032
157.00	-1.198425	-.585250	-10.742591	-2.402639	-1.154184	-.585250
157.50	-1.175910	-.581580	-11.697850	-2.482147	-1.175910	-.581580
158.00	-1.154184	-.578022	-12.801863	-2.566126	-1.198425	-.578022
158.50	-1.133210	-.574572	-14.089690	-2.654923	-1.221767	-.574572
159.00	-1.112957	-.571227	-15.609546	-2.748919	-1.245974	-.571227
159.50	-1.093393	-.567987	-17.422708	-2.848537	-1.271090	-.567987
160.00	-1.074488	-.564849	-19.622320	-2.954241	-1.297158	-.564849
160.50	-1.056214	-.561811	-22.337799	-3.066548	-1.324227	-.561811
161.00	-1.038544	-.558871	-25.764994	-3.186031	-1.352347	-.558871
161.50	-1.021453	-.556027	-30.211965	-3.313330	-1.381573	-.556027
162.00	-1.004919	-.553277	-36.192539	-3.449156	-1.411962	-.553277
162.50	-.988916	-.550621	-44.632146	-3.594311	-1.443576	-.550621
163.00	-.973426	-.548056	-57.382422	-3.749689	-1.476480	-.548056
163.50	-.958427	-.545580	-75.765038	-3.916303	-1.510746	-.545580
164.00	-.943899	-.543193		-4.095295	-1.546447	-.543193
164.50	-.929826	-.540892		-4.287960	-1.583666	-.540892
165.00	-.916188	-.538678		-4.495775	-1.622489	-.538678
165.50	-.902971	-.536547		-4.720426	-1.663009	-.536547
166.00	-.890157	-.534499		-4.963850	-1.705325	-.534499
166.50	-.877733	-.532533	95.892827	-5.228281	-1.749545	-.532533
167.00	-.865683	-.530648	74.648463	-5.516305	-1.795785	-.530648

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
167.50	-.853995	-.528843	62.079238	-5.830936	-1.844170	-.528843
168.00	-.842654	-.527116	53.866012	-6.175705	-1.894836	-.527116
168.50	-.831650	-.525466	48.160527	-6.554774	-1.947927	-.525466
169.00	-.820770	-.523894	44.041600	-6.973076	-2.003602	-.523894
169.50	-.810503	-.522397	41.000717	-7.436510	-2.062033	-.522397
170.00	-.800538	-.520975	38.736432	-7.952177	-2.123405	-.520975
170.50	-.790766	-.519627	37.061119	-8.528701	-2.187920	-.519627
171.00	-.781275	-.518353	35.854619	-9.176657	-2.255801	-.518353
171.50	-.772058	-.517151	35.039628	-9.909146	-2.327286	-.517151
172.00	-.763104	-.516022	34.568047	-10.742591	-2.402639	-.516022
172.50	-.754406	-.514964	34.413715	-11.697850	-2.482147	-.514964
173.00	-.745955	-.513977	34.568097	-12.801803	-2.566126	-.513977
173.50	-.737743	-.513060	35.039628	-14.089680	-2.654923	-.513060
174.00	-.729764	-.512213	35.854619	-15.608548	-2.748919	-.512213
174.50	-.722009	-.511436	37.061119	-17.422708	-2.848537	-.511436
175.00	-.714472	-.510727	38.736432	-19.622320	-2.954241	-.510727
175.50	-.707147	-.510087	41.000717	-22.337799	-3.066548	-.510087
176.00	-.700027	-.509516	44.041600	-25.764994	-3.186031	-.509516
176.50	-.693105	-.509012	48.160527	-30.211965	-3.313330	-.509012
177.00	-.686377	-.508576	53.866012	-36.192539	-3.449156	-.508576
177.50	-.679837	-.508208	62.079238	-44.632146	-3.594311	-.508208
178.00	-.673478	-.507907	74.648483	-57.387422	-3.749689	-.507907
178.50	-.667297	-.507672	95.892827	-78.765038	-3.916303	-.507672
179.00	-.661289	-.507505			-4.095295	-.507505
179.50	-.655448	-.507405			-4.287960	-.507405
180.00						

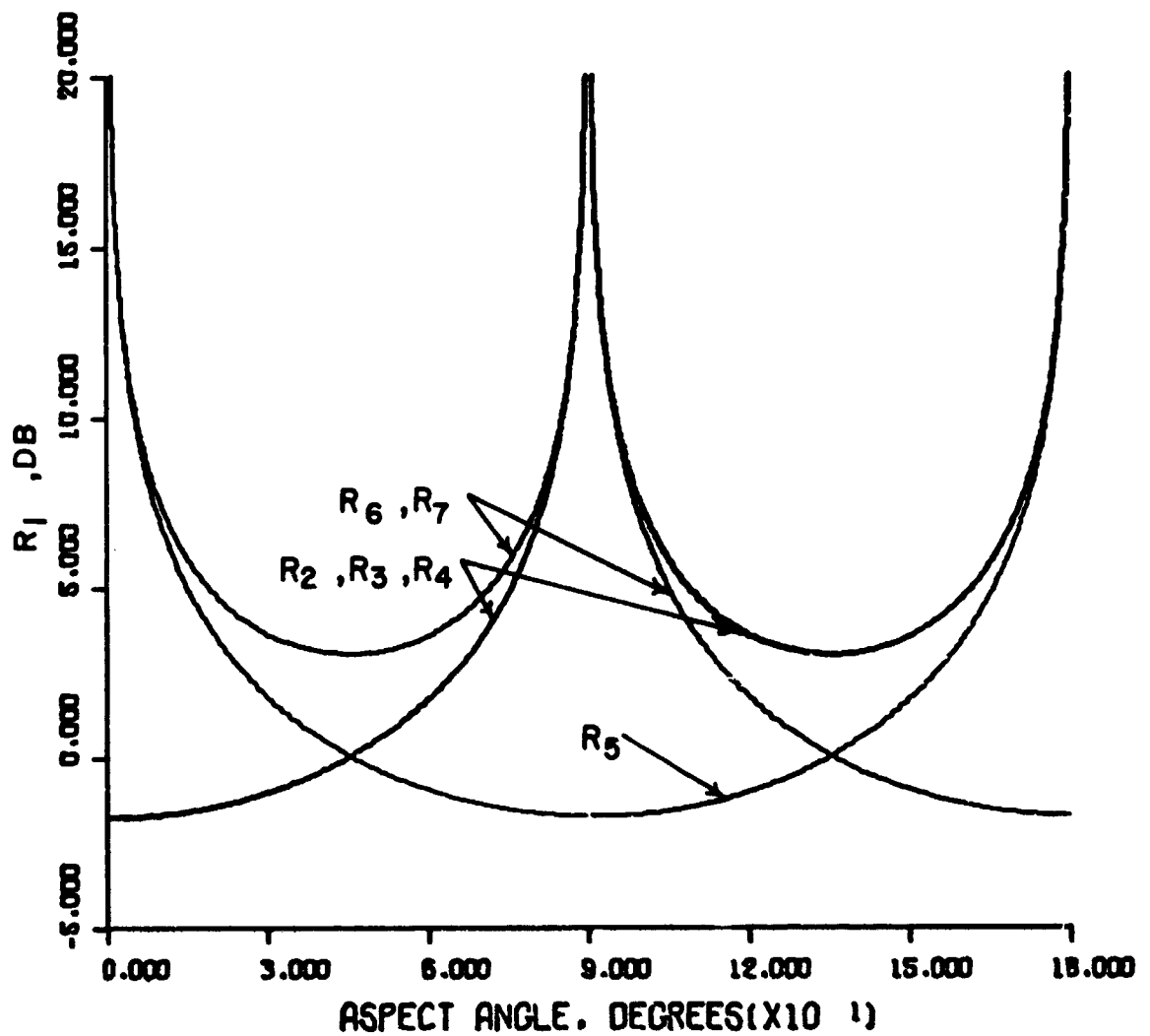


FIGURE A-8. DIFFRACTION COEFFICIENTS
 $(\alpha = 0^\circ, n = 3/2, R_1 = -0.666667)$

TABLE A-9. DIFFRACTION COEFFICIENTS
 $(\alpha = 0 \text{ deg}, n = 3/2, R_1 = -0.666667)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.6666697	-.6666697	-.6666697	-98.909212	99.575909	99.575909
1.00	-.6666787	-.6666787	-.6666787	-49.292926	49.959713	49.959713
1.50	-.6666938	-.6666938	-.6666938	-32.756344	33.423282	33.423282
2.00	-.667148	-.667148	-.667148	-24.489668	25.156816	25.156816
2.50	-.667419	-.667419	-.667419	-19.530937	20.198357	20.198357
3.00	-.667751	-.667751	-.667751	-16.226166	16.893917	16.893917
3.50	-.668143	-.668143	-.668143	-13.866503	14.534646	14.534646
4.00	-.668596	-.668596	-.668596	-12.097524	12.766120	12.766120
4.50	-.669110	-.669110	-.669110	-10.722325	11.391435	11.391435
5.00	-.669685	-.669685	-.669685	-9.622765	10.292451	10.292451
5.50	-.670322	-.670322	-.670322	-8.723664	9.393986	9.393986
6.00	-.671020	-.671020	-.671020	-7.974901	8.645921	8.645921
6.50	-.671780	-.671780	-.671780	-7.341778	8.013558	8.013558
7.00	-.672603	-.672603	-.672603	-6.799509	7.472112	7.472112
7.50	-.673488	-.673488	-.673488	-6.329921	7.003409	7.003409
8.00	-.674436	-.674436	-.674436	-5.919381	6.593817	6.593817
8.50	-.675447	-.675447	-.675447	-5.557466	6.232913	6.232913
9.00	-.676522	-.676522	-.676522	-5.236068	5.912590	5.912590
9.50	-.677662	-.677662	-.677662	-4.948787	5.626449	5.626449
10.00	-.678866	-.678866	-.678866	-4.690503	5.369369	5.369369
10.50	-.680135	-.680135	-.680135	-4.457070	5.137205	5.137205
11.00	-.681470	-.681470	-.681470	-4.245098	4.926568	4.926568
11.50	-.682872	-.682872	-.682872	-4.051785	4.734656	4.734656
12.00	-.684340	-.684340	-.684340	-3.874796	4.559136	4.559136
12.50	-.685876	-.685876	-.685876	-3.712171	4.398047	4.398047
13.00	-.687480	-.687480	-.687480	-3.562251	4.249731	4.249731
13.50	-.689153	-.689153	-.689153	-3.423622	4.112775	4.112775
14.00	-.690896	-.690896	-.690896	-3.295073	3.985969	3.985969
14.50	-.692709	-.692709	-.692709	-3.175560	3.868269	3.868269
15.00	-.694593	-.694593	-.694593	-3.064178	3.758770	3.758770
15.50	-.696549	-.696549	-.696549	-2.960138	3.656687	3.656687
16.00	-.698578	-.698578	-.698578	-2.862751	3.561329	3.561329
16.50	-.700681	-.700681	-.700681	-2.771412	3.472093	3.472093
17.00	-.702858	-.702858	-.702858	-2.685585	3.388443	3.388443
17.50	-.705111	-.705111	-.705111	-2.604797	3.309908	3.309908
18.00	-.707441	-.707441	-.707441	-2.528627	3.236068	3.236068
18.50	-.709849	-.709849	-.709849	-2.456700	3.166548	3.166548
19.00	-.712335	-.712335	-.712335	-2.388680	3.101015	3.101015
19.50	-.714902	-.714902	-.714902	-2.324265	3.039167	3.039167
20.00	-.717549	-.717549	-.717549	-2.263185	2.980734	2.980734
20.50	-.720279	-.720279	-.720279	-2.205195	2.925474	2.925474
21.00	-.723093	-.723093	-.723093	-2.150073	2.873146	2.873146
21.50	-.725992	-.725992	-.725992	-2.097619	2.823611	2.823611
22.00	-.728978	-.728978	-.728978	-2.047450	2.776627	2.776627
22.50	-.732051	-.732051	-.732051	-2.000000	2.732051	2.732051
23.00	-.735213	-.735213	-.735213	-1.954517	2.689731	2.689731
23.50	-.738467	-.738467	-.738467	-1.911063	2.649530	2.649530
24.00	-.741813	-.741813	-.741813	-1.869510	2.611323	2.611323
24.50	-.745254	-.745254	-.745254	-1.829741	2.574995	2.574995
25.00	-.748790	-.748790	-.748790	-1.791650	2.540440	2.540440
25.50	-.752424	-.752424	-.752424	-1.755126	2.507560	2.507560
26.00	-.756158	-.756158	-.756158	-1.720109	2.476264	2.476264
26.50	-.759993	-.759993	-.759993	-1.686483	2.446476	2.446476
27.00	-.763932	-.763932	-.763932	-1.654187	2.418114	2.418114

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
27.50	-.767976	-.767976	-.767976	-1.623132	2.391108	2.391108
28.00	-.772129	-.772129	-.772129	-1.593266	2.365395	2.365395
28.50	-.776391	-.776391	-.776391	-1.564521	2.340912	2.340912
29.00	-.780766	-.780766	-.780766	-1.536840	2.317606	2.317606
29.50	-.785255	-.785255	-.785255	-1.510168	2.295423	2.295423
30.00	-.789862	-.789862	-.789862	-1.484454	2.274316	2.274316
30.50	-.794588	-.794588	-.794588	-1.459652	2.254240	2.254240
31.00	-.799437	-.799437	-.799437	-1.435716	2.235153	2.235153
31.50	-.804412	-.804412	-.804412	-1.412606	2.217017	2.217017
32.00	-.809514	-.809514	-.809514	-1.390282	2.199796	2.199796
32.50	-.814748	-.814748	-.814748	-1.368708	2.183456	2.183456
33.00	-.820116	-.820116	-.820116	-1.347851	2.167967	2.167967
33.50	-.825622	-.825622	-.825622	-1.327677	2.153299	2.153299
34.00	-.831268	-.831268	-.831268	-1.308157	2.139425	2.139425
34.50	-.837059	-.837059	-.837059	-1.289262	2.126322	2.126322
35.00	-.842999	-.842999	-.842999	-1.270966	2.113964	2.113964
35.50	-.849090	-.849090	-.849090	-1.253242	2.102332	2.102332
36.00	-.855336	-.855336	-.855336	-1.236068	2.091404	2.091404
36.50	-.861743	-.861743	-.861743	-1.219420	2.081163	2.081163
37.00	-.868314	-.868314	-.868314	-1.203278	2.071592	2.071592
37.50	-.875053	-.875053	-.875053	-1.187620	2.062673	2.062673
38.00	-.881966	-.881966	-.881966	-1.172428	2.054394	2.054394
38.50	-.889056	-.889056	-.889056	-1.157684	2.046741	2.046741
39.00	-.896329	-.896329	-.896329	-1.143371	2.039700	2.039700
39.50	-.903791	-.903791	-.903791	-1.129472	2.033263	2.033263
40.00	-.911445	-.911445	-.911445	-1.115972	2.027417	2.027417
40.50	-.919299	-.919299	-.919299	-1.102856	2.022155	2.022155
41.00	-.927358	-.927358	-.927358	-1.090110	2.017468	2.017468
41.50	-.935628	-.935628	-.935628	-1.077721	2.013349	2.013349
42.00	-.944115	-.944115	-.944115	-1.065676	2.009792	2.009792
42.50	-.952827	-.952827	-.952827	-1.053964	2.006790	2.006790
43.00	-.961769	-.961769	-.961769	-1.042572	2.004341	2.004341
43.50	-.970950	-.970950	-.970950	-1.031490	2.002440	2.002440
44.00	-.980377	-.980377	-.980377	-1.020707	2.001084	2.001084
44.50	-.990057	-.990057	-.990057	-1.010214	2.000271	2.000271
45.00	-1.000000	-1.000000	-1.000000	-1.000000	2.000000	2.000000
45.50	-1.010214	-1.010214	-1.010214	-.990057	2.000271	2.000271
46.00	-1.020707	-1.020707	-1.020707	-.980377	2.001084	2.001084
46.50	-1.031490	-1.031490	-1.031490	-.970950	2.002440	2.002440
47.00	-1.042572	-1.042572	-1.042572	-.961769	2.004341	2.004341
47.50	-1.053964	-1.053964	-1.053964	-.952827	2.006790	2.006790
48.00	-1.065676	-1.065676	-1.065676	-.944115	2.009792	2.009792
48.50	-1.077721	-1.077721	-1.077721	-.935628	2.013349	2.013349
49.00	-1.090110	-1.090110	-1.090110	-.927358	2.017468	2.017468
49.50	-1.102856	-1.102856	-1.102856	-.919299	2.022155	2.022155
50.00	-1.115972	-1.115972	-1.115972	-.911445	2.027417	2.027417
50.50	-1.129472	-1.129472	-1.129472	-.903791	2.033263	2.033263
51.00	-1.143371	-1.143371	-1.143371	-.896329	2.039700	2.039700
51.50	-1.157684	-1.157684	-1.157684	-.889056	2.046741	2.046741
52.00	-1.172428	-1.172428	-1.172428	-.881966	2.054394	2.054394
52.50	-1.187620	-1.187620	-1.187620	-.875053	2.062673	2.062673
53.00	-1.203278	-1.203278	-1.203278	-.868314	2.071592	2.071592
53.50	-1.219420	-1.219420	-1.219420	-.861743	2.081163	2.081163
54.00	-1.236068	-1.236068	-1.236068	-.855336	2.091404	2.091404
54.50	-1.253242	-1.253242	-1.253242	-.849090	2.102332	2.102332
55.00	-1.270966	-1.270966	-1.270966	-.842999	2.113964	2.113964

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<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
55.50	-1.289262	-1.289262	-1.289262	-.837059	2.126322	2.126322
56.00	-1.308157	-1.308157	-1.308157	-.831268	2.139425	2.139425
56.50	-1.327677	-1.327677	-1.327677	-.825622	2.153299	2.153299
57.00	-1.347851	-1.347851	-1.347851	-.820116	2.167967	2.167967
57.50	-1.368708	-1.368708	-1.368708	-.814748	2.183456	2.183456
58.00	-1.390282	-1.390282	-1.390282	-.809514	2.199796	2.199796
58.50	-1.412606	-1.412606	-1.412606	-.804412	2.217017	2.217017
59.00	-1.435716	-1.435716	-1.435716	-.799437	2.235153	2.235153
59.50	-1.459652	-1.459652	-1.459652	-.794588	2.254240	2.254240
60.00	-1.484454	-1.484454	-1.484454	-.789862	2.274316	2.274316
60.50	-1.510168	-1.510168	-1.510168	-.785255	2.295423	2.295423
61.00	-1.536840	-1.536840	-1.536840	-.780766	2.317606	2.317606
61.50	-1.564521	-1.564521	-1.564521	-.776391	2.340912	2.340912
62.00	-1.593266	-1.593266	-1.593266	-.772129	2.365395	2.365395
62.50	-1.623132	-1.623132	-1.623132	-.767976	2.391108	2.391108
63.00	-1.654182	-1.654182	-1.654182	-.763932	2.418114	2.418114
63.50	-1.686483	-1.686483	-1.686483	-.759993	2.446476	2.446476
64.00	-1.720109	-1.720109	-1.720109	-.756158	2.476266	2.476266
64.50	-1.755136	-1.755136	-1.755136	-.752424	2.507560	2.507560
65.00	-1.791650	-1.791650	-1.791650	-.748790	2.540440	2.540440
65.50	-1.829741	-1.829741	-1.829741	-.745254	2.574995	2.574995
66.00	-1.869510	-1.869510	-1.869510	-.741813	2.611323	2.611323
66.50	-1.911063	-1.911063	-1.911063	-.738467	2.649530	2.649530
67.00	-1.954517	-1.954517	-1.954517	-.735213	2.689731	2.689731
67.50	-2.000000	-2.000000	-2.000000	-.732051	2.732051	2.732051
68.00	-2.047650	-2.047650	-2.047650	-.728978	2.776627	2.776627
68.50	-2.097619	-2.097619	-2.097619	-.725992	2.823611	2.823611
69.00	-2.150073	-2.150073	-2.150073	-.723093	2.873166	2.873166
69.50	-2.205195	-2.205195	-2.205195	-.720279	2.925474	2.925474
70.00	-2.263185	-2.263185	-2.263185	-.717549	2.980734	2.980734
70.50	-2.324265	-2.324265	-2.324265	-.714902	3.039167	3.039167
71.00	-2.388680	-2.388680	-2.388680	-.712335	3.101015	3.101015
71.50	-2.456700	-2.456700	-2.456700	-.709849	3.166548	3.166548
72.00	-2.528627	-2.528627	-2.528627	-.707441	3.236068	3.236068
72.50	-2.604797	-2.604797	-2.604797	-.705111	3.309908	3.309908
73.00	-2.685585	-2.685585	-2.685585	-.702858	3.388443	3.388443
73.50	-2.771412	-2.771412	-2.771412	-.700681	3.472093	3.472093
74.00	-2.862751	-2.862751	-2.862751	-.698578	3.561329	3.561329
74.50	-2.959138	-2.959138	-2.959138	-.696549	3.656687	3.656687
75.00	-3.064178	-3.064178	-3.064178	-.694593	3.758770	3.758770
75.50	-3.175560	-3.175560	-3.175560	-.692709	3.868269	3.868269
76.00	-3.295073	-3.295073	-3.295073	-.690896	3.985969	3.985969
76.50	-3.423622	-3.423622	-3.423622	-.689153	4.112775	4.112775
77.00	-3.562251	-3.562251	-3.562251	-.687490	4.249731	4.249731
77.50	-3.712171	-3.712171	-3.712171	-.685876	4.398047	4.398047
78.00	-3.874796	-3.874796	-3.874796	-.684340	4.559136	4.559136
78.50	-4.051785	-4.051785	-4.051785	-.682872	4.734656	4.734656
79.00	-4.245098	-4.245098	-4.245098	-.681470	4.926568	4.926568
79.50	-4.457070	-4.457070	-4.457070	-.680135	5.137205	5.137205
80.00	-4.690503	-4.690503	-4.690503	-.678866	5.369369	5.369369
80.50	-4.948187	-4.948187	-4.948187	-.677662	5.626449	5.626449
81.00	-5.236068	-5.236068	-5.236068	-.676522	5.912590	5.912590
81.50	-5.557466	-5.557466	-5.557466	-.675447	6.232913	6.232913
82.00	-5.919381	-5.919381	-5.919381	-.674436	6.599387	6.599387
82.50	-6.324921	-6.324921	-6.324921	-.673488	7.003409	7.003409
83.00	-6.799509	-6.799509	-6.799509	-.672603	7.472117	7.472117

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
83.50	-7.341778	-7.341778	-7.341778	-.671780	8.013558	8.013558
84.00	-7.974901	-7.974901	-7.974901	-.671020	8.645921	8.645921
84.50	-8.723664	-8.723664	-8.723664	-.670322	9.393986	9.393986
85.00	-9.622765	-9.622765	-9.622765	-.669685	10.292451	10.292451
85.50	-10.722325	-10.722325	-10.722325	-.669110	11.391435	11.391435
86.00	-12.097524	-12.097524	-12.097524	-.668596	12.766120	12.766120
86.50	-13.866503	-13.866503	-13.866503	-.668143	14.534646	14.534646
87.00	-16.226166	-16.226166	-16.226166	-.667751	16.893917	16.893917
87.50	-19.530937	-19.530937	-19.530937	-.667419	20.198357	20.198357
88.00	-24.489668	-24.489668	-24.489668	-.667148	25.156816	25.156816
88.50	-32.756344	-32.756344	-32.756344	-.666938	33.423282	33.423282
89.00	-49.292926	-49.292926	-49.292926	-.666787	49.959713	49.959713
89.50	-98.909212	-98.909212	-98.909212	-.666697	99.575909	99.575909
90.00						
90.50	99.575909	99.575909	99.575909	-.666697	-98.909212	-98.909212
91.00	49.959713	49.959713	49.959713	-.666787	-49.292926	-49.292926
91.50	33.423282	33.423282	33.423282	-.666938	-32.756344	-32.756344
92.00	25.156816	25.156816	25.156816	-.667148	-24.489668	-24.489668
92.50	20.198357	20.198357	20.198357	-.667419	-19.530937	-19.530937
93.00	16.893917	16.893917	16.893917	-.667751	-16.226166	-16.226166
93.50	14.534646	14.534646	14.534646	-.668143	-13.866503	-13.866503
94.00	12.766120	12.766120	12.766120	-.668596	-12.097524	-12.097524
94.50	11.391435	11.391435	11.391435	-.669110	-10.722325	-10.722325
95.00	10.292451	10.292451	10.292451	-.669685	-9.622765	-9.622765
95.50	9.393986	9.393986	9.393986	-.670322	-8.723664	-8.723664
96.00	8.645921	8.645921	8.645921	-.671020	-7.974901	-7.974901
96.50	8.013558	8.013558	8.013558	-.671780	-7.341778	-7.341778
97.00	7.472112	7.472112	7.472112	-.672603	-6.799509	-6.799509
97.50	7.003409	7.003409	7.003409	-.673488	-6.329921	-6.329921
98.00	6.593817	6.593817	6.593817	-.674436	-5.919381	-5.919381
98.50	6.232913	6.232913	6.232913	-.675447	-5.557466	-5.557466
99.00	5.912590	5.912590	5.912590	-.676522	-5.236068	-5.236068
99.50	5.626449	5.626449	5.626449	-.677662	-4.948787	-4.948787
100.00	5.369369	5.369369	5.369369	-.678866	-4.690503	-4.690503
100.50	5.137205	5.137205	5.137205	-.680135	-4.457070	-4.457070
101.00	4.926568	4.926568	4.926568	-.681470	-4.245098	-4.245098
101.50	4.734656	4.734656	4.734656	-.682872	-4.051785	-4.051785
102.00	4.559136	4.559136	4.559136	-.684340	-3.874796	-3.874796
102.50	4.398047	4.398047	4.398047	-.685876	-3.712171	-3.712171
103.00	4.249731	4.249731	4.249731	-.687480	-3.562251	-3.562251
103.50	4.112775	4.112775	4.112775	-.689153	-3.423622	-3.423622
104.00	3.985969	3.985969	3.985969	-.690896	-3.295073	-3.295073
104.50	3.868269	3.868269	3.868269	-.692709	-3.175560	-3.175560
105.00	3.758770	3.758770	3.758770	-.694593	-3.064176	-3.064176
105.50	3.656687	3.656687	3.656687	-.696549	-2.960138	-2.960138
106.00	3.561329	3.561329	3.561329	-.698578	-2.862751	-2.862751
106.50	3.472093	3.472093	3.472093	-.700681	-2.771412	-2.771412
107.00	3.388443	3.388443	3.388443	-.702858	-2.685585	-2.685585
107.50	3.309908	3.309908	3.309908	-.705111	-2.604797	-2.604797
108.00	3.236068	3.236068	3.236068	-.707441	-2.528627	-2.528627
108.50	3.166548	3.166548	3.166548	-.709849	-2.456700	-2.456700
109.00	3.101015	3.101015	3.101015	-.712335	-2.388680	-2.388680
109.50	3.039167	3.039167	3.039167	-.714902	-2.324265	-2.324265
110.00	2.980734	2.980734	2.980734	-.717549	-2.263185	-2.263185
110.50	2.925474	2.925474	2.925474	-.720279	-2.205195	-2.205195
111.00	2.873166	2.873166	2.873166	-.723093	-2.150073	-2.150073

<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
111.50	2.823611	2.823611	2.823611	-.725992	-2.097619	-2.097619
112.00	2.776627	2.776627	2.776627	-.724978	-2.047650	-2.047650
112.50	2.732051	2.732051	2.732051	-.732051	-2.000000	-2.000000
113.00	2.689731	2.689731	2.689731	-.735213	-1.954517	-1.954517
113.50	2.649530	2.649530	2.649530	-.738467	-1.911063	-1.911063
114.00	2.611323	2.611323	2.611323	-.741813	-1.869510	-1.869510
114.50	2.574995	2.574995	2.574995	-.745254	-1.829741	-1.829741
115.00	2.540440	2.540440	2.540440	-.748790	-1.791650	-1.791650
115.50	2.507560	2.507560	2.507560	-.752424	-1.755136	-1.755136
116.00	2.476266	2.476266	2.476266	-.756158	-1.720109	-1.720109
116.50	2.446476	2.446476	2.446476	-.759993	-1.686483	-1.686483
117.00	2.418114	2.418114	2.418114	-.763932	-1.654182	-1.654182
117.50	2.391108	2.391108	2.391108	-.767976	-1.623132	-1.623132
118.00	2.365395	2.365395	2.365395	-.772129	-1.593266	-1.593266
118.50	2.340912	2.340912	2.340912	-.776391	-1.564521	-1.564521
119.00	2.317606	2.317606	2.317606	-.780766	-1.536840	-1.536840
119.50	2.295423	2.295423	2.295423	-.785255	-1.510168	-1.510168
120.00	2.274316	2.274316	2.274316	-.789862	-1.484454	-1.484454
120.50	2.254240	2.254240	2.254240	-.794588	-1.459652	-1.459652
121.00	2.235153	2.235153	2.235153	-.799437	-1.435716	-1.435716
121.50	2.217017	2.217017	2.217017	-.804412	-1.412606	-1.412606
122.00	2.199796	2.199796	2.199796	-.809514	-1.390282	-1.390282
122.50	2.183456	2.183456	2.183456	-.814748	-1.368708	-1.368708
123.00	2.167967	2.167967	2.167967	-.820116	-1.347851	-1.347851
123.50	2.153299	2.153299	2.153299	-.825622	-1.327677	-1.327677
124.00	2.139425	2.139425	2.139425	-.831268	-1.308157	-1.308157
124.50	2.126322	2.126322	2.126322	-.837059	-1.289262	-1.289262
125.00	2.113964	2.113964	2.113964	-.842999	-1.270966	-1.270966
125.50	2.102332	2.102332	2.102332	-.849090	-1.253242	-1.253242
126.00	2.091404	2.091404	2.091404	-.855336	-1.236068	-1.236068
126.50	2.081163	2.081163	2.081163	-.861743	-1.219420	-1.219420
127.00	2.071592	2.071592	2.071592	-.868314	-1.203278	-1.203278
127.50	2.062673	2.062673	2.062673	-.875053	-1.187620	-1.187620
128.00	2.054394	2.054394	2.054394	-.881966	-1.172428	-1.172428
128.50	2.046741	2.046741	2.046741	-.889056	-1.157684	-1.157684
129.00	2.039700	2.039700	2.039700	-.896329	-1.143371	-1.143371
129.50	2.033263	2.033263	2.033263	-.903791	-1.129472	-1.129472
130.00	2.027417	2.027417	2.027417	-.911445	-1.115972	-1.115972
130.50	2.022155	2.022155	2.022155	-.919299	-1.102856	-1.102856
131.00	2.017468	2.017468	2.017468	-.927358	-1.090110	-1.090110
131.50	2.013349	2.013349	2.013349	-.935628	-1.077721	-1.077721
132.00	2.009792	2.009792	2.009792	-.944115	-1.065676	-1.065676
132.50	2.006790	2.006790	2.006790	-.952827	-1.053964	-1.053964
133.00	2.004341	2.004341	2.004341	-.961769	-1.042572	-1.042572
133.50	2.002440	2.002440	2.002440	-.970950	-1.031490	-1.031490
134.00	2.001084	2.001084	2.001084	-.980377	-1.020707	-1.020707
134.50	2.000271	2.000271	2.000271	-.990057	-1.010214	-1.010214
135.00	2.000000	2.000000	2.000000	-1.000000	-1.000000	-1.000000
135.50	2.000271	2.000271	2.000271	-1.010214	-.990057	-.990057
136.00	2.001084	2.001084	2.001084	-1.020707	-.980377	-.980377
136.50	2.002440	2.002440	2.002440	-1.031490	-.970950	-.970950
137.00	2.004341	2.004341	2.004341	-1.042572	-.961769	-.961769
137.50	2.006790	2.006790	2.006790	-1.053964	-.952827	-.952827
138.00	2.009792	2.009792	2.009792	-1.065676	-.944115	-.944115
138.50	2.013349	2.013349	2.013349	-1.077721	-.935628	-.935628
139.00	2.017468	2.017468	2.017468	-1.090110	-.927358	-.927358

θ	R_2	R_3	R_4	R_5	R_6	R_7
139.50	2.022155	2.022155	2.022155	-1.102856	-.919299	-.919299
140.00	2.027417	2.027417	2.027417	-1.115972	-.911445	-.911445
140.50	2.033263	2.033263	2.033263	-1.129472	-.903791	-.903791
141.00	2.039700	2.039700	2.039700	-1.143371	-.896329	-.896329
141.50	2.046741	2.046741	2.046741	-1.157684	-.889056	-.889056
142.00	2.054394	2.054394	2.054394	-1.172428	-.881966	-.881966
142.50	2.062673	2.062673	2.062673	-1.187620	-.875053	-.875053
143.00	2.071592	2.071592	2.071592	-1.203278	-.868314	-.868314
143.50	2.081163	2.081163	2.081163	-1.219420	-.861743	-.861743
144.00	2.091404	2.091404	2.091404	-1.236068	-.855336	-.855336
144.50	2.102332	2.102332	2.102332	-1.253242	-.849090	-.849090
145.00	2.113964	2.113964	2.113964	-1.270966	-.842999	-.842999
145.50	2.126322	2.126322	2.126322	-1.289262	-.837059	-.837059
146.00	2.139425	2.139425	2.139425	-1.308157	-.831268	-.831268
146.50	2.153299	2.153299	2.153299	-1.327677	-.825622	-.825622
147.00	2.167967	2.167967	2.167967	-1.347851	-.820116	-.820116
147.50	2.183456	2.183456	2.183456	-1.368708	-.814748	-.814748
148.00	2.199796	2.199796	2.199796	-1.390282	-.809514	-.809514
148.50	2.217017	2.217017	2.217017	-1.412606	-.804412	-.804412
149.00	2.235153	2.235153	2.235153	-1.435716	-.799437	-.799437
149.50	2.254240	2.254240	2.254240	-1.459652	-.794588	-.794588
150.00	2.274316	2.274316	2.274316	-1.484454	-.789862	-.789862
150.50	2.295423	2.295423	2.295423	-1.510168	-.785255	-.785255
151.00	2.317606	2.317606	2.317606	-1.536840	-.780766	-.780766
151.50	2.340912	2.340912	2.340912	-1.564521	-.776391	-.776391
152.00	2.365395	2.365395	2.365395	-1.593266	-.772129	-.772129
152.50	2.391108	2.391108	2.391108	-1.623132	-.767976	-.767976
153.00	2.418114	2.418114	2.418114	-1.654182	-.763932	-.763932
153.50	2.446476	2.446476	2.446476	-1.686483	-.759993	-.759993
154.00	2.476266	2.476266	2.476266	-1.720109	-.756158	-.756158
154.50	2.507560	2.507560	2.507560	-1.755136	-.752424	-.752424
155.00	2.540440	2.540440	2.540440	-1.791650	-.748790	-.748790
155.50	2.574995	2.574995	2.574995	-1.829741	-.745254	-.745254
156.00	2.611323	2.611323	2.611323	-1.869510	-.741813	-.741813
156.50	2.649530	2.649530	2.649530	-1.911063	-.738467	-.738467
157.00	2.689731	2.689731	2.689731	-1.954517	-.735213	-.735213
157.50	2.732051	2.732051	2.732051	-2.000000	-.732051	-.732051
158.00	2.776627	2.776627	2.776627	-2.047650	-.728978	-.728978
158.50	2.823611	2.823611	2.823611	-2.097619	-.725992	-.725992
159.00	2.873166	2.873166	2.873166	-2.150073	-.723093	-.723093
159.50	2.925474	2.925474	2.925474	-2.205195	-.720279	-.720279
160.00	2.980734	2.980734	2.980734	-2.263185	-.717549	-.717549
160.50	3.039167	3.039167	3.039167	-2.324265	-.714902	-.714902
161.00	3.101015	3.101015	3.101015	-2.388680	-.712335	-.712335
161.50	3.166548	3.166548	3.166548	-2.456700	-.709849	-.709849
162.00	3.236068	3.236068	3.236068	-2.528627	-.707441	-.707441
162.50	3.309908	3.309908	3.309908	-2.604797	-.705111	-.705111
163.00	3.388443	3.388443	3.388443	-2.685585	-.702858	-.702858
163.50	3.472093	3.472093	3.472093	-2.771412	-.700681	-.700681
164.00	3.561329	3.561329	3.561329	-2.862751	-.698578	-.698578
164.50	3.656687	3.656687	3.656687	-2.960138	-.696549	-.696549
165.00	3.758170	3.758170	3.758170	-3.064178	-.694593	-.694593
165.50	3.866269	3.866269	3.866269	-3.175540	-.692709	-.692709
166.00	3.983969	3.983969	3.983969	-3.294507	-.690896	-.690896
166.50	4.112775	4.112775	4.112775	-3.423622	-.689153	-.689153
167.00	4.249731	4.249731	4.249731	-3.562251	-.687480	-.687480

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<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
167.50	4.398047	4.398047	4.398047	-3.712171	-.685876	-.685876
168.00	4.559136	4.559136	4.559136	-3.874796	-.684340	-.684340
168.50	4.734656	4.734656	4.734656	-4.051785	-.682872	-.682872
169.00	4.926568	4.926568	4.926568	-4.245098	-.681470	-.681470
169.50	5.137205	5.137205	5.137205	-4.457070	-.680135	-.680135
170.00	5.369369	5.369369	5.369369	-4.690503	-.678866	-.678866
170.50	5.626449	5.626449	5.626449	-4.948787	-.677662	-.677662
171.00	5.912590	5.912590	5.912590	-5.236068	-.676522	-.676522
171.50	6.232913	6.232913	6.232913	-5.557466	-.675447	-.675447
172.00	6.593817	6.593817	6.593817	-5.919381	-.674436	-.674436
172.50	7.003409	7.003409	7.003409	-6.329921	-.673488	-.673488
173.00	7.472112	7.472112	7.472112	-6.799509	-.672603	-.672603
173.50	8.013558	8.013558	8.013558	-7.341778	-.671780	-.671780
174.00	8.645921	8.645921	8.645921	-7.974901	-.671020	-.671020
174.50	9.393986	9.393986	9.393986	-8.723664	-.670322	-.670322
175.00	10.292451	10.292451	10.292451	-9.622765	-.669685	-.669685
175.50	11.391435	11.391435	11.391435	-10.722325	-.669110	-.669110
176.00	12.766120	12.766120	12.766120	-12.097524	-.668596	-.668596
176.50	14.534646	14.534646	14.534646	-13.866503	-.668143	-.668143
177.00	16.893917	16.893917	16.893917	-16.226166	-.667751	-.667751
177.50	20.198357	20.198357	20.198357	-19.530937	-.667419	-.667419
178.00	25.156816	25.156816	25.156816	-24.489668	-.667148	-.667148
178.50	33.423282	33.423282	33.423282	-32.756344	-.666938	-.666938
179.00	49.959713	49.959713	49.959713	-49.292926	-.666787	-.666787
179.50	99.575909	99.575909	99.575909	-98.909212	-.666697	-.666697
180.00						

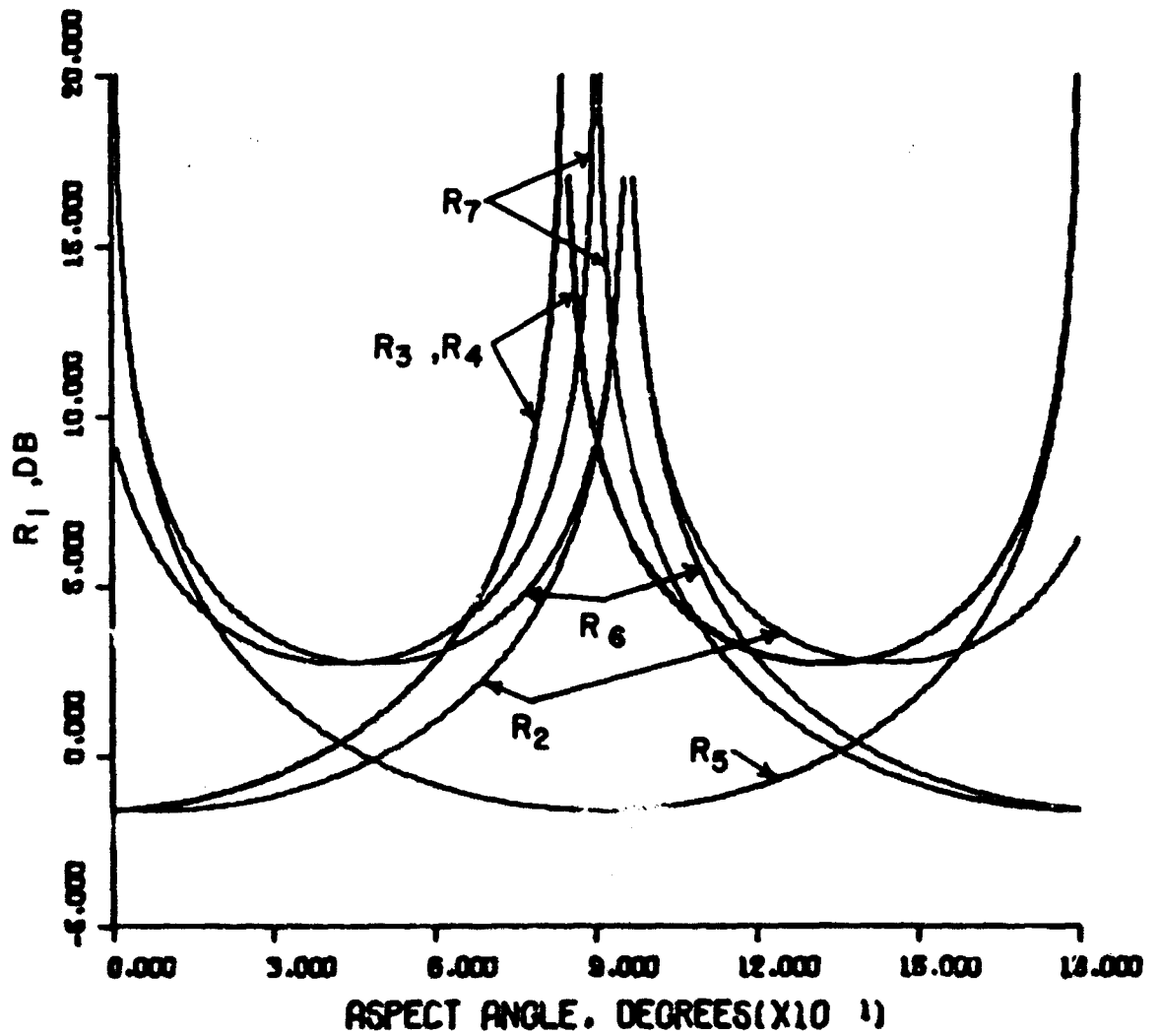


FIGURE A-9. DIFFRACTION COEFFICIENTS
 $(\alpha = 6 \text{ deg}, n = 3/2 + \alpha/\pi,$
 $R_1 = -0.684901)$

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TABLE A-10. DIFFRACTION COEFFICIENTS
 $(\alpha = 6 \text{ deg}, n = 3/2 + \alpha/\pi, R_1 = -0.684901)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.688593	-.690066	-.690066	-98.658135	99.241746	7.944266
1.00	-.687950	-.690897	-.690897	-49.187625	49.771308	7.403968
1.50	-.687369	-.691790	-.691790	-32.694407	33.283209	6.936191
2.00	-.686850	-.692748	-.692748	-24.456744	25.040715	6.527342
2.50	-.686392	-.693769	-.693769	-19.512291	20.096477	6.167030
3.00	-.685996	-.694855	-.694855	-16.216931	16.801382	5.847170
3.50	-.685661	-.696006	-.696006	-13.863902	14.448666	5.561382
4.00	-.685387	-.697222	-.697222	-12.099822	12.684947	5.304560
4.50	-.685175	-.698503	-.698503	-10.728368	11.313902	5.072572
5.00	-.685023	-.699852	-.699852	-9.631747	10.217739	4.862038
5.50	-.684931	-.701267	-.701267	-8.734999	9.321497	4.670163
6.00	-.684901	-.702749	-.702749	-7.988150	8.575205	4.494622
6.50	-.684931	-.704300	-.704300	-7.356606	7.944266	4.333460
7.00	-.685023	-.705920	-.705920	-6.815654	7.403968	4.185021
7.50	-.685175	-.707609	-.707609	-6.347172	6.936191	4.047899
8.00	-.685387	-.709368	-.709368	-5.937569	6.527342	3.920889
8.50	-.685661	-.711199	-.711199	-5.576452	6.167030	3.802939
9.00	-.685996	-.713101	-.713101	-5.255737	5.847170	3.693159
9.50	-.686392	-.715076	-.715076	-4.969043	5.561382	3.590759
10.00	-.686850	-.717124	-.717124	-4.711264	5.304560	3.495054
10.50	-.687369	-.719247	-.719247	-4.478268	5.072572	3.405438
11.00	-.687950	-.721445	-.721445	-4.266672	4.862038	3.321380
11.50	-.688593	-.723719	-.723719	-4.073686	4.670163	3.242408
12.00	-.689298	-.726071	-.726071	-3.896979	4.494622	3.168104
12.50	-.690066	-.728501	-.728501	-3.734598	4.333460	3.098093
13.00	-.690897	-.731010	-.731010	-3.584887	4.185021	3.032041
13.50	-.691790	-.733600	-.733600	-3.446438	4.047899	2.969650
14.00	-.692748	-.736273	-.736273	-3.318043	3.920885	2.910643
14.50	-.693769	-.739028	-.739028	-3.198660	3.802939	2.854794
15.00	-.694855	-.741867	-.741867	-3.087388	3.693159	2.801867
15.50	-.696006	-.744792	-.744792	-2.983470	3.590759	2.751668
16.00	-.697222	-.747805	-.747805	-2.886129	3.495054	2.704016
16.50	-.698503	-.750905	-.750905	-2.794851	3.405438	2.658747
17.00	-.699852	-.754096	-.754096	-2.709071	3.321380	2.615709
17.50	-.701267	-.757379	-.757379	-2.628320	3.242408	2.574765
18.00	-.702749	-.760755	-.760755	-2.552175	3.168104	2.535790
18.50	-.704300	-.764225	-.764225	-2.480264	3.098093	2.498669
19.00	-.705920	-.767792	-.767792	-2.412252	3.032041	2.463295
19.50	-.707609	-.771458	-.771458	-2.347837	2.969650	2.429570
20.00	-.709368	-.775224	-.775224	-2.286750	2.910648	2.397406
20.50	-.711199	-.779092	-.779092	-2.228746	2.854794	2.366718
21.00	-.713101	-.783064	-.783064	-2.173606	2.801867	2.337431
21.50	-.715076	-.787142	-.787142	-2.121128	2.751668	2.309473
22.00	-.717124	-.791329	-.791329	-2.071130	2.704016	2.282778
22.50	-.719247	-.795627	-.795627	-2.023447	2.658747	2.257287
23.00	-.721445	-.800038	-.800038	-1.977928	2.615709	2.232942
23.50	-.723719	-.804564	-.804564	-1.934433	2.574765	2.209690
24.00	-.726071	-.809208	-.809208	-1.892837	2.535790	2.187484
24.50	-.728501	-.813972	-.813972	-1.853023	2.498669	2.166277
25.00	-.731010	-.818860	-.818860	-1.814882	2.463295	2.146026
25.50	-.733600	-.823874	-.823874	-1.778318	2.429570	2.126694
26.00	-.736273	-.829016	-.829016	-1.743238	2.397406	2.108242
26.50	-.739028	-.834291	-.834291	-1.709558	2.366718	2.090637
27.00	-.741867	-.839700	-.839700	-1.677200	2.337431	2.073846

θ	R_2	R_3	R_4	R_5	R_6	R_7
27.50	-.744792	-.845248	-.845248	-1.646093	2.309473	2.057839
28.00	-.747805	-.850937	-.850937	-1.616168	2.282778	2.042589
28.50	-.750905	-.856772	-.856772	-1.587364	2.257287	2.028070
29.00	-.754096	-.862755	-.862755	-1.559621	2.232942	2.014256
29.50	-.757379	-.868891	-.868891	-1.532887	2.209690	2.001125
30.00	-.760755	-.875183	-.875183	-1.507111	2.187484	1.988656
30.50	-.764225	-.881636	-.881636	-1.482245	2.166277	1.976828
31.00	-.767792	-.888253	-.888253	-1.458246	2.146026	1.965624
31.50	-.771458	-.895040	-.895040	-1.435071	2.126694	1.955026
32.00	-.775224	-.902000	-.902000	-1.412683	2.108242	1.945018
32.50	-.779092	-.909139	-.909139	-1.391045	2.090637	1.935584
33.00	-.783064	-.916462	-.916462	-1.370122	2.073846	1.926712
33.50	-.787142	-.923973	-.923973	-1.349884	2.057839	1.918386
34.00	-.791329	-.931678	-.931678	-1.330299	2.042589	1.910597
34.50	-.795627	-.939583	-.939583	-1.311339	2.028070	1.903332
35.00	-.800038	-.947694	-.947694	-1.292977	2.014256	1.896581
35.50	-.804564	-.956017	-.956017	-1.275188	2.001125	1.890335
36.00	-.809208	-.964557	-.964557	-1.257949	1.988656	1.884585
36.50	-.813972	-.973322	-.973322	-1.241237	1.976828	1.879323
37.00	-.818860	-.982319	-.982319	-1.225030	1.965624	1.874541
37.50	-.823874	-.991555	-.991555	-1.209308	1.955026	1.870235
38.00	-.829016	-1.001037	-1.001037	-1.194052	1.945018	1.866397
38.50	-.834291	-1.010774	-1.010774	-1.179245	1.935584	1.863022
39.00	-.839700	-1.020774	-1.020774	-1.164868	1.926712	1.860106
39.50	-.845248	-1.031045	-1.031045	-1.150906	1.918386	1.857645
40.00	-.850937	-1.041596	-1.041596	-1.137344	1.910597	1.855637
40.50	-.856772	-1.052437	-1.052437	-1.124166	1.903332	1.854077
41.00	-.862755	-1.063579	-1.063579	-1.111358	1.896581	1.852964
41.50	-.868891	-1.075030	-1.075030	-1.098908	1.890335	1.852297
42.00	-.875183	-1.086803	-1.086803	-1.086803	1.884585	1.852075
42.50	-.881636	-1.098908	-1.098908	-1.075030	1.879323	1.852297
43.00	-.888253	-1.111358	-1.111358	-1.063579	1.874541	1.852964
43.50	-.895040	-1.124166	-1.124166	-1.052437	1.870235	1.854077
44.00	-.902000	-1.137344	-1.137344	-1.041596	1.866397	1.855637
44.50	-.909139	-1.150906	-1.150906	-1.031045	1.863022	1.857645
45.00	-.916462	-1.164868	-1.164868	-1.020774	1.860106	1.860106
45.50	-.923973	-1.179245	-1.179245	-1.010774	1.857645	1.863022
46.00	-.931678	-1.194052	-1.194052	-1.001037	1.855637	1.866397
46.50	-.939583	-1.209308	-1.209308	-.991555	1.854077	1.870235
47.00	-.947694	-1.225030	-1.225030	-.982319	1.852964	1.874541
47.50	-.956017	-1.241237	-1.241237	-.973322	1.852297	1.879323
48.00	-.964557	-1.257949	-1.257949	-.964557	1.852075	1.884585
48.50	-.973322	-1.275188	-1.275188	-.956017	1.852297	1.890335
49.00	-.982319	-1.292977	-1.292977	-.947694	1.852964	1.896581
49.50	-.991555	-1.311339	-1.311339	-.939583	1.854077	1.903332
50.00	-1.001037	-1.330299	-1.330299	-.931678	1.855637	1.910597
50.50	-1.010774	-1.349884	-1.349884	-.923973	1.857645	1.918386
51.00	-1.020774	-1.370122	-1.370122	-.916462	1.860106	1.926712
51.50	-1.031045	-1.391045	-1.391045	-.909139	1.863022	1.935584
52.00	-1.041596	-1.412683	-1.412683	-.902000	1.866397	1.945018
52.50	-1.052437	-1.435071	-1.435071	-.895040	1.870235	1.955026
53.00	-1.063579	-1.458246	-1.458246	-.888253	1.874541	1.965624
53.50	-1.075030	-1.482245	-1.482245	-.881636	1.879323	1.976828
54.00	-1.086803	-1.507111	-1.507111	-.875183	1.884585	1.988656
54.50	-1.098908	-1.532887	-1.532887	-.868891	1.890335	2.001125
55.00	-1.111358	-1.559621	-1.559621	-.862755	1.896581	2.014256

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
55.50	-1.124166	-1.587364	-1.587364	-.856772	1.903332	2.028070
56.00	-1.137344	-1.616168	-1.616168	-.850937	1.910597	2.042589
56.50	-1.150906	-1.646093	-1.646093	-.845248	1.918386	2.057839
57.00	-1.164868	-1.677200	-1.677200	-.839700	1.926712	2.073846
57.50	-1.179245	-1.709558	-1.709558	-.834291	1.935584	2.090637
58.00	-1.194052	-1.743238	-1.743238	-.829016	1.945018	2.108242
58.50	-1.209308	-1.778318	-1.778318	-.823674	1.955026	2.126694
59.00	-1.225030	-1.814882	-1.814882	-.818860	1.965624	2.146026
59.50	-1.241237	-1.853023	-1.853023	-.813972	1.976828	2.166277
60.00	-1.257949	-1.892837	-1.892837	-.809208	1.988656	2.187484
60.50	-1.275188	-1.934433	-1.934433	-.804564	2.001125	2.209690
61.00	-1.292977	-1.977928	-1.977928	-.800038	2.014256	2.232942
61.50	-1.311339	-2.023447	-2.023447	-.795627	2.028070	2.257287
62.00	-1.330299	-2.071130	-2.071130	-.791329	2.042589	2.282778
62.50	-1.349884	-2.121128	-2.121128	-.787142	2.057839	2.309473
63.00	-1.370122	-2.173606	-2.173606	-.783064	2.073846	2.337431
63.50	-1.391045	-2.228746	-2.228746	-.779092	2.090637	2.366718
64.00	-1.412683	-2.286750	-2.286750	-.775224	2.108242	2.397408
64.50	-1.435071	-2.347837	-2.347837	-.771458	2.126694	2.429570
65.00	-1.458246	-2.412252	-2.412252	-.767792	2.146026	2.463295
65.50	-1.482245	-2.480264	-2.480264	-.764225	2.166277	2.498669
66.00	-1.507111	-2.552175	-2.552175	-.760755	2.187484	2.535790
66.50	-1.532887	-2.628320	-2.628320	-.757379	2.209690	2.574765
67.00	-1.559621	-2.709071	-2.709071	-.754096	2.232942	2.615709
67.50	-1.587364	-2.794851	-2.794851	-.750905	2.257287	2.658747
68.00	-1.616168	-2.886129	-2.886129	-.747805	2.282778	2.704016
68.50	-1.646093	-2.983440	-2.983440	-.744792	2.309473	2.751668
69.00	-1.677200	-3.087388	-3.087388	-.741867	2.337431	2.801867
69.50	-1.709558	-3.198660	-3.198660	-.739028	2.366718	2.854794
70.00	-1.743238	-3.318043	-3.318043	-.736273	2.397406	2.910648
70.50	-1.778318	-3.446438	-3.446438	-.733600	2.429570	2.969650
71.00	-1.814882	-3.584887	-3.584887	-.731010	2.463295	3.032041
71.50	-1.853023	-3.734598	-3.734598	-.728501	2.498669	3.098093
72.00	-1.892837	-3.896979	-3.896979	-.726071	2.535790	3.168104
72.50	-1.934433	-4.073686	-4.073686	-.723719	2.574765	3.242408
73.00	-1.977928	-4.266673	-4.266673	-.721445	2.615709	3.321380
73.50	-2.023447	-4.478268	-4.478268	-.719247	2.658747	3.405438
74.00	-2.071130	-4.711264	-4.711264	-.717124	2.704016	3.495054
74.50	-2.121128	-4.969043	-4.969043	-.715076	2.751668	3.590759
75.00	-2.173606	-5.255737	-5.255737	-.713101	2.801867	3.693159
75.50	-2.228746	-5.576452	-5.576452	-.711199	2.854794	3.802939
76.00	-2.286750	-5.937569	-5.937569	-.709368	2.910648	3.920885
76.50	-2.347837	-6.347172	-6.347172	-.707609	2.969650	4.047899
77.00	-2.412252	-6.815654	-6.815654	-.705920	3.032041	4.185021
77.50	-2.480264	-7.356606	-7.356606	-.704300	3.098093	4.333460
78.00	-2.552175	-7.988150	-7.988150	-.702749	3.168104	4.494622
78.50	-2.628320	-8.734999	-8.734999	-.701267	3.242408	4.670163
79.00	-2.709071	-9.631747	-9.631747	-.699852	3.321380	4.862038
79.50	-2.794851	-10.728368	-10.728368	-.698503	3.405438	5.072572
80.00	-2.886129	-12.099822	-12.099822	-.697222	3.495054	5.304560
80.50	-2.983440	-13.863902	-13.863902	-.696006	3.590759	5.561382
81.00	-3.087388	-16.216931	-16.216931	-.694855	3.693159	5.847170
81.50	-3.198660	-19.512291	-19.512291	-.693769	3.802939	6.167030
82.00	-3.318043	-24.456744	-24.456744	-.692748	3.920885	6.527342
82.50	-3.446438	-32.694407	-32.694407	-.691790	4.047899	6.936191
83.00	-3.584887	-49.187625	-49.187625	-.690897	4.185021	7.403968

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<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
83.50	-3.734598	-98.658135	-98.658135	-.690066	4.333460	7.944266
84.00						
84.50						
85.00	-4.266673	49.771308	49.771308	-.687950	4.862038	10.217739
85.50	-4.478268	33.283209	33.283209	-.687369	5.072572	11.313902
86.00	-4.711264	25.040715	25.040715	-.686850	5.304560	12.684947
86.50	-4.969043	20.096477	20.096477	-.686392	5.561382	14.448666
87.00	-5.255737	16.801382	16.801382	-.685996	5.847170	16.801382
87.50	-5.576452	14.448666	14.448666	-.685661	6.167030	20.096477
88.00	-5.937569	12.684947	12.684947	-.685387	6.527342	25.040715
88.50	-6.347172	11.313902	11.313902	-.685175	6.936191	33.283209
89.00	-6.815654	10.217739	10.217739	-.685023	7.403968	49.771308
89.50	-7.356606	9.321497	9.321497	-.684931	7.944266	99.241740
90.00						
90.50	-8.734999	7.944266	7.944266	-.684931	9.321497	-98.658135
91.00	-9.531747	7.403968	7.403968	-.685023	10.217739	-49.187625
91.50	-10.728368	6.936191	6.936191	-.685175	11.313902	-32.699407
92.00	-12.099822	6.527342	6.527342	-.685387	12.684947	-24.456744
92.50	-13.863902	6.167030	6.167030	-.685661	14.448666	-19.512291
93.00	-16.216931	5.847170	5.847170	-.685996	16.801382	-16.216931
93.50	-19.512291	5.561382	5.561382	-.686392	20.096477	-13.863902
94.00	-24.456744	5.304560	5.304560	-.686850	25.040715	-12.099822
94.50	-32.699407	5.072572	5.072572	-.687369	33.283209	-10.728368
95.00	-49.187625	4.862038	4.862038	-.687950	49.771308	-9.631747
95.50						
96.00						
96.50						
97.00	49.771308	4.185021	4.185021	-.690897	-49.187625	-6.815654
97.50	33.283209	4.047899	4.047899	-.691790	-32.699407	-6.347172
98.00	25.040715	3.920885	3.920885	-.692748	-24.456744	-5.937569
98.50	20.096477	3.802939	3.802939	-.693769	-19.512291	-5.576452
99.00	16.801382	3.693159	3.693159	-.694855	-16.216931	-5.255737
99.50	14.448666	3.590759	3.590759	-.696006	-13.863902	-4.969043
100.00	12.684947	3.495054	3.495054	-.697222	-12.099822	-4.711264
100.50	11.313902	3.405438	3.405438	-.698503	-10.728368	-4.478268
101.00	10.217739	3.321380	3.321380	-.699852	-9.631747	-4.266673
101.50	9.321497	3.242408	3.242408	-.701267	-8.734999	-4.073686
102.00	8.575205	3.168104	3.168104	-.702749	-7.988150	-3.896979
102.50	7.944266	3.098093	3.098093	-.704300	-7.356606	-3.734598
103.00	7.403968	3.032041	3.032041	-.705920	-6.815654	-3.584887
103.50	6.936191	2.969650	2.969650	-.707609	-6.347172	-3.446438
104.00	6.527342	2.910648	2.910648	-.709368	-5.937569	-3.318043
104.50	6.167030	2.854794	2.854794	-.711194	-5.576452	-3.198660
105.00	5.847170	2.801867	2.801867	-.713101	-5.255737	-3.087388
105.50	5.561382	2.751668	2.751668	-.715076	-4.969043	-2.983440
106.00	5.304560	2.704016	2.704016	-.717124	-4.711264	-2.886129
106.50	5.072572	2.658747	2.658747	-.719247	-4.478268	-2.794851
107.00	4.862038	2.615709	2.615709	-.721445	-4.266673	-2.709071
107.50	4.670163	2.574765	2.574765	-.723719	-4.073686	-2.628320
108.00	4.494622	2.535790	2.535790	-.726071	-3.896979	-2.552175
108.50	4.333460	2.498669	2.498669	-.728501	-3.734598	-2.480264
109.00	4.185021	2.463295	2.463295	-.731010	-3.584887	-2.412252
109.50	4.047899	2.429570	2.429570	-.733600	-3.446438	-2.347837
110.00	3.920885	2.397406	2.397406	-.736273	-3.318043	-2.286750
110.50	3.802939	2.366718	2.366718	-.739028	-3.198660	-2.228746
111.00	3.693159	2.337431	2.337431	-.741867	-3.087388	-2.173606

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<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
111.50	3.590759	2.309473	2.309473	-.744792	-2.983440	-2.121128
112.00	3.495054	2.282778	2.282778	-.747805	-2.886129	-2.071130
112.50	3.405438	2.257287	2.257287	-.750905	-2.794851	-2.023447
113.00	3.321380	2.232942	2.232942	-.754096	-2.709071	-1.977928
113.50	3.242408	2.209690	2.209690	-.757379	-2.628320	-1.934433
114.00	3.168104	2.187484	2.187484	-.760755	-2.552175	-1.892837
114.50	3.098093	2.166277	2.166277	-.764225	-2.480264	-1.853023
115.00	3.032041	2.146026	2.146026	-.767792	-2.412252	-1.814882
115.50	2.969650	2.126694	2.126694	-.771458	-2.347837	-1.778318
116.00	2.910648	2.108242	2.108242	-.775224	-2.286750	-1.743238
116.50	2.854794	2.090637	2.090637	-.779092	-2.228746	-1.709558
117.00	2.801867	2.073846	2.073846	-.783064	-2.173606	-1.677200
117.50	2.751688	2.057839	2.057839	-.787142	-2.121128	-1.646093
118.00	2.704016	2.042589	2.042589	-.791329	-2.071130	-1.616168
118.50	2.658747	2.028070	2.028070	-.795627	-2.023447	-1.587364
119.00	2.615709	2.014256	2.014256	-.800038	-1.977928	-1.559621
119.50	2.574765	2.001125	2.001125	-.804564	-1.934433	-1.532887
120.00	2.535790	1.988656	1.988656	-.809208	-1.892837	-1.507111
120.50	2.498669	1.976828	1.976828	-.813972	-1.853023	-1.482245
121.00	2.463295	1.965624	1.965624	-.818860	-1.814882	-1.458246
121.50	2.429570	1.955026	1.955026	-.823874	-1.778318	-1.435071
122.00	2.397406	1.945018	1.945018	-.829016	-1.743238	-1.412683
122.50	2.366718	1.935584	1.935584	-.834291	-1.709558	-1.391045
123.00	2.337431	1.926712	1.926712	-.839700	-1.677200	-1.370122
123.50	2.309473	1.918386	1.918386	-.845248	-1.646093	-1.349884
124.00	2.282778	1.910597	1.910597	-.850937	-1.616168	-1.330299
124.50	2.257287	1.903332	1.903332	-.856772	-1.587364	-1.311339
125.00	2.232942	1.896581	1.896581	-.862755	-1.559621	-1.292977
125.50	2.209690	1.890335	1.890335	-.868891	-1.532887	-1.275188
126.00	2.187484	1.884585	1.884585	-.875183	-1.507111	-1.257949
126.50	2.166277	1.879323	1.879323	-.881636	-1.482245	-1.241237
127.00	2.146026	1.874541	1.874541	-.888253	-1.458246	-1.225030
127.50	2.126694	1.870235	1.870235	-.895040	-1.435071	-1.209308
128.00	2.108242	1.866397	1.866397	-.902000	-1.412683	-1.194052
128.50	2.090637	1.863022	1.863022	-.909139	-1.391045	-1.179245
129.00	2.073846	1.860106	1.860106	-.916462	-1.370122	-1.164868
129.50	2.057839	1.857645	1.857645	-.923973	-1.349884	-1.150906
130.00	2.042589	1.855637	1.855637	-.931678	-1.330299	-1.137344
130.50	2.028070	1.854077	1.854077	-.939583	-1.311339	-1.124166
131.00	2.014256	1.852964	1.852964	-.947694	-1.292977	-1.111358
131.50	2.001125	1.852297	1.852297	-.956017	-1.275188	-1.098908
132.00	1.988656	1.852075	1.852075	-.964557	-1.257949	-1.086803
132.50	1.976828	1.852297	1.852297	-.973322	-1.241237	-1.075030
133.00	1.965624	1.852964	1.852964	-.982319	-1.225030	-1.063579
133.50	1.955026	1.854077	1.854077	-.991555	-1.209308	-1.052437
134.00	1.945018	1.855637	1.855637	-1.001037	-1.194052	-1.041596
134.50	1.935584	1.857645	1.857645	-1.010774	-1.179245	-1.031045
135.00	1.926712	1.860106	1.860106	-1.020774	-1.164868	-1.020774
135.50	1.918386	1.863022	1.863022	-1.031045	-1.150906	-1.010774
136.00	1.910597	1.866397	1.866397	-1.041596	-1.137344	-1.001037
136.50	1.903332	1.870235	1.870235	-1.052437	-1.124166	-.991555
137.00	1.896581	1.874541	1.874541	-1.063579	-1.111358	-.982319
137.50	1.890335	1.879323	1.879323	-1.075030	-1.098908	-.973322
138.00	1.884585	1.884585	1.884585	-1.086803	-1.086803	-.964557
138.50	1.879323	1.890335	1.890335	-1.098908	-1.075030	-.956017
139.00	1.874541	1.896581	1.896581	-1.111358	-1.063579	-.947694

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
139.50	1.870235	1.903332	1.903332	-1.124166	-1.052437	-.939583
140.00	1.866397	1.910597	1.910597	-1.137344	-1.041596	-.931678
140.50	1.863022	1.918386	1.918386	-1.150906	-1.031045	-.923973
141.00	1.860106	1.926712	1.926712	-1.164868	-1.020774	-.916462
141.50	1.857645	1.935584	1.935584	-1.179245	-1.010774	-.909139
142.00	1.855637	1.945018	1.945018	-1.194052	-1.001037	-.902000
142.50	1.854077	1.955026	1.955026	-1.209308	-.991555	-.895040
143.00	1.852964	1.965624	1.965624	-1.225030	-.982319	-.888253
143.50	1.852297	1.976828	1.976828	-1.241237	-.973322	-.881636
144.00	1.852075	1.988656	1.988656	-1.257949	-.964557	-.875183
144.50	1.852297	2.001125	2.001125	-1.275184	-.956017	-.868891
145.00	1.852964	2.014256	2.014256	-1.292977	-.947694	-.862755
145.50	1.854077	2.028070	2.028070	-1.311339	-.939583	-.856772
146.00	1.855637	2.042589	2.042589	-1.330299	-.931678	-.850937
146.50	1.857645	2.057839	2.057839	-1.349884	-.923973	-.845248
147.00	1.860106	2.073846	2.073846	-1.370122	-.916462	-.839700
147.50	1.863022	2.090637	2.090637	-1.391045	-.909139	-.834291
148.00	1.866397	2.108242	2.108242	-1.412683	-.902000	-.829016
148.50	1.870235	2.126694	2.126694	-1.435071	-.895040	-.823874
149.00	1.874541	2.146026	2.146026	-1.458246	-.888253	-.818860
149.50	1.879323	2.166277	2.166277	-1.482245	-.881636	-.813972
150.00	1.884585	2.187484	2.187484	-1.507111	-.875183	-.809208
150.50	1.890335	2.209690	2.209690	-1.532887	-.868891	-.804564
151.00	1.896581	2.232942	2.232942	-1.559621	-.862755	-.800038
151.50	1.903332	2.257287	2.257287	-1.587364	-.856772	-.795627
152.00	1.910597	2.282778	2.282778	-1.616168	-.850937	-.791329
152.50	1.918386	2.309473	2.309473	-1.646093	-.845248	-.787142
153.00	1.926712	2.337431	2.337431	-1.677200	-.839700	-.783064
153.50	1.935584	2.366718	2.366718	-1.709558	-.834291	-.779092
154.00	1.945018	2.397406	2.397406	-1.743238	-.829016	-.775224
154.50	1.955026	2.429570	2.429570	-1.778318	-.823874	-.771458
155.00	1.965624	2.463295	2.463295	-1.814882	-.818860	-.767792
155.50	1.976828	2.498669	2.498669	-1.853023	-.813972	-.764225
156.00	1.988656	2.535790	2.535790	-1.892837	-.809208	-.760755
156.50	2.001125	2.574765	2.574765	-1.934433	-.804564	-.757379
157.00	2.014256	2.615709	2.615709	-1.977928	-.800038	-.754096
157.50	2.028070	2.658747	2.658747	-2.023447	-.795627	-.750905
158.00	2.042589	2.704016	2.704016	-2.071130	-.791329	-.747805
158.50	2.057839	2.751668	2.751668	-2.121128	-.787142	-.744792
159.00	2.073846	2.801867	2.801867	-2.173606	-.783064	-.741867
159.50	2.090637	2.854794	2.854794	-2.228746	-.779092	-.739028
160.00	2.108242	2.910648	2.910648	-2.286750	-.775224	-.736273
160.50	2.126694	2.969650	2.969650	-2.347837	-.771458	-.733600
161.00	2.146026	3.032041	3.032041	-2.412252	-.767792	-.731010
161.50	2.166277	3.098093	3.098093	-2.480264	-.764225	-.728501
162.00	2.187484	3.168104	3.168104	-2.552175	-.760755	-.726071
162.50	2.209690	3.242408	3.242408	-2.628320	-.757379	-.723719
163.00	2.232942	3.321380	3.321380	-2.709471	-.754096	-.721445
163.50	2.257287	3.405438	3.405438	-2.794851	-.750905	-.719247
164.00	2.282778	3.495054	3.495054	-2.886129	-.747805	-.717124
164.50	2.309473	3.590759	3.590759	-2.983440	-.744792	-.715076
165.00	2.337431	3.693159	3.693159	-3.087388	-.741867	-.713101
165.50	2.366718	3.802939	3.802939	-3.198660	-.739028	-.711199
166.00	2.397406	3.920885	3.920885	-3.318043	-.736273	-.709368
166.50	2.429570	4.047899	4.047899	-3.444638	-.733600	-.707609
167.00	2.463295	4.185021	4.185021	-3.584887	-.731010	-.705920

<u>Q</u>	<u>R₀</u>	<u>R₁</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>
167.50	2.498669	4.333460	4.333460	-3.734598	-.728501	-.704300
168.00	2.535790	4.494622	4.494622	-3.896979	-.726071	-.702749
168.50	2.574765	4.670163	4.670163	-4.073686	-.723719	-.701267
169.00	2.615709	4.862038	4.862038	-4.266673	-.721445	-.699852
169.50	2.658747	5.072572	5.072572	-4.478268	-.719247	-.698503
170.00	2.704016	5.304560	5.304560	-4.711264	-.717124	-.697222
170.50	2.751668	5.561382	5.561382	-4.969043	-.715076	-.696006
171.00	2.801667	5.847170	5.847170	-5.255737	-.713101	-.694855
171.50	2.854794	6.167030	6.167030	-5.576452	-.711199	-.693769
172.00	2.910648	6.527342	6.527342	-5.937569	-.709368	-.692748
172.50	2.969650	6.936191	6.936191	-6.347172	-.707609	-.691790
173.00	3.032041	7.403968	7.403968	-6.815654	-.705920	-.690897
173.50	3.098093	7.944266	7.944266	-7.356606	-.704300	-.690066
174.00	3.168104	8.575205	8.575205	-7.988150	-.702749	-.689298
174.50	3.242408	9.321497	9.321497	-8.734999	-.701267	-.688593
175.00	3.321380	10.217739	10.217739	-9.631747	-.699852	-.687950
175.50	3.405438	11.313902	11.313902	-10.728368	-.698503	-.687369
176.00	3.495054	12.684947	12.684947	-12.099822	-.697222	-.686850
176.50	3.590759	14.448666	14.448666	-13.863902	-.696006	-.686392
177.00	3.693150	16.801382	16.801382	-16.216931	-.694855	-.685996
177.50	3.802939	20.096477	20.096477	-19.512291	-.693769	-.685661
178.00	3.920885	25.040715	25.040715	-24.456744	-.692748	-.685387
178.50	4.047899	33.283209	33.283209	-32.699407	-.691790	-.685175
179.00	4.185021	49.771308	49.771308	-49.187625	-.690897	-.685023
179.50	4.333460	99.241746	99.241746	-98.658135	-.690066	-.684931
180.00						

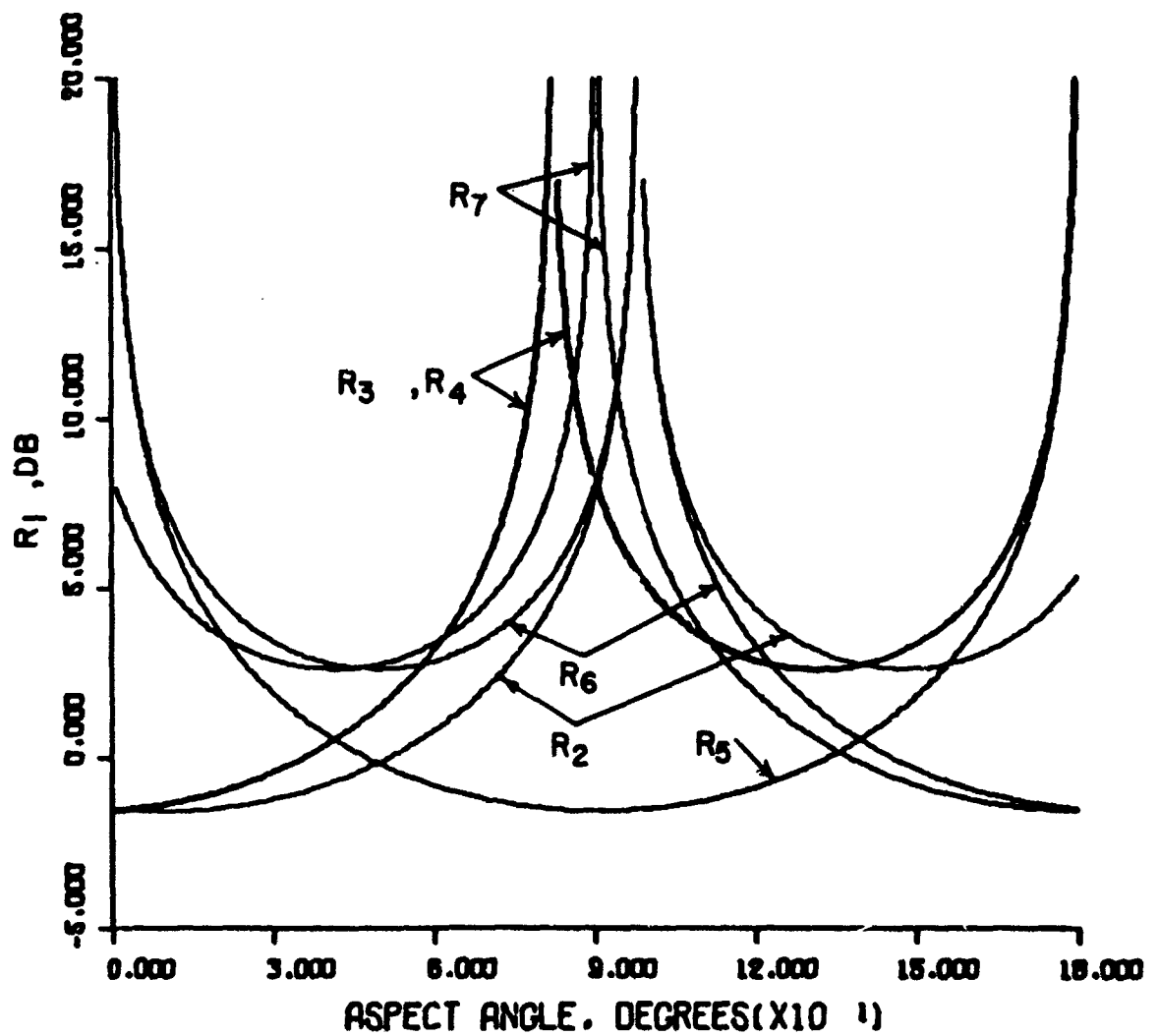


FIGURE A-10. DIFFRACTION COEFFICIENTS
 $(\alpha = 8 \text{ deg, } n = 3/2 + \alpha/\pi,$
 $R_1 = -0.691119)$

TABLE A-11. DIFFRACTION COEFFICIENTS
 $(\alpha = 8 \text{ deg}, n = 3/2 + \alpha/\pi, R_1 = -0.691119)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.698034	-.700020	-.700020	-98.642853	99.201357	6.150810
1.00	-.697137	-.701109	-.701109	-49.186108	49.744679	5.830902
1.50	-.696303	-.702264	-.702264	-32.702412	33.261095	5.545053
2.00	-.695532	-.703484	-.703484	-24.461963	25.020801	5.288160
2.50	-.694825	-.704771	-.704771	-19.518900	20.077839	5.056091
3.00	-.694180	-.706124	-.706124	-16.224270	16.783555	4.845467
3.50	-.693596	-.707544	-.707544	-13.871809	14.431384	4.653495
4.00	-.693075	-.709032	-.709032	-12.108132	12.668043	4.477849
4.50	-.692616	-.710588	-.710588	-10.736973	11.297264	4.316574
5.00	-.692219	-.712214	-.712214	-9.640571	10.201288	4.168018
5.50	-.691882	-.713909	-.713909	-8.743988	9.305175	4.030771
6.00	-.691608	-.715674	-.715674	-7.997264	8.558967	3.903627
6.50	-.691394	-.717511	-.717511	-7.365812	7.929078	3.785544
7.00	-.691241	-.719420	-.719420	-6.824929	7.387803	3.675623
7.50	-.691150	-.721402	-.721402	-6.356497	6.920025	3.573076
8.00	-.691119	-.723457	-.723457	-5.946929	6.511158	3.477219
8.50	-.691150	-.725587	-.725587	-5.585834	6.150810	3.387446
9.00	-.691241	-.727793	-.727793	-5.265132	5.830902	3.303225
9.50	-.691394	-.730075	-.730075	-4.978442	5.545053	3.224086
10.00	-.691608	-.732434	-.732434	-4.720660	5.288160	3.149609
10.50	-.691882	-.734873	-.734873	-4.487655	5.056091	3.079420
11.00	-.692219	-.737391	-.737391	-4.276046	4.845467	3.013186
11.50	-.692616	-.739990	-.739990	-4.083042	4.653495	2.950607
12.00	-.693075	-.742671	-.742671	-3.906314	4.477849	2.891413
12.50	-.693596	-.745435	-.745435	-3.743908	4.316574	2.835361
13.00	-.694180	-.748284	-.748284	-3.594171	4.168018	2.782232
13.50	-.694825	-.751219	-.751219	-3.455693	4.030771	2.731825
14.00	-.695532	-.754242	-.754242	-3.327267	3.903627	2.683959
14.50	-.696303	-.757353	-.757353	-3.207853	3.785544	2.638471
15.00	-.697137	-.760554	-.760554	-3.096547	3.675623	2.595208
15.50	-.698034	-.763847	-.763847	-2.992565	3.573076	2.554035
16.00	-.698995	-.767234	-.767234	-2.895218	3.477219	2.514825
16.50	-.700020	-.770716	-.770716	-2.803904	3.387446	2.477462
17.00	-.701109	-.774295	-.774295	-2.718088	3.303225	2.441841
17.50	-.702264	-.777972	-.777972	-2.637249	3.224086	2.407864
18.00	-.703484	-.781750	-.781750	-2.561117	3.149609	2.375440
18.50	-.704771	-.785630	-.785630	-2.489168	3.079420	2.344487
19.00	-.706124	-.789615	-.789615	-2.421117	3.013186	2.314928
19.50	-.707544	-.793706	-.793706	-2.356664	2.950607	2.286692
20.00	-.709032	-.797906	-.797906	-2.295539	2.891413	2.259712
20.50	-.710588	-.802217	-.802217	-2.237496	2.835361	2.233929
21.00	-.712214	-.806642	-.806642	-2.182317	2.782232	2.209285
21.50	-.713909	-.811182	-.811182	-2.129401	2.731825	2.185727
22.00	-.715674	-.815840	-.815840	-2.079765	2.683959	2.163207
22.50	-.717511	-.820619	-.820619	-2.032043	2.638471	2.141678
23.00	-.719420	-.825521	-.825521	-1.986486	2.595208	2.121099
23.50	-.721402	-.830550	-.830550	-1.942954	2.554035	2.101429
24.00	-.723457	-.835708	-.835708	-1.901320	2.514825	2.082632
24.50	-.725587	-.840998	-.840998	-1.861466	2.477462	2.064672
25.00	-.727793	-.846423	-.846423	-1.823290	2.441841	2.047519
25.50	-.730075	-.851987	-.851987	-1.786689	2.407864	2.031140
26.00	-.732434	-.857693	-.857693	-1.751572	2.375440	2.015509
26.50	-.734873	-.863544	-.863544	-1.717855	2.344487	2.000598
27.00	-.737391	-.869544	-.869544	-1.685462	2.314928	1.986383

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θ	R_2	R_3	R_4	R_5	R_6	R_7
27.50	-.739990	-.875697	-.875697	-1.654318	2.286692	1.972841
28.00	-.742671	-.882007	-.882007	-1.624358	2.259712	1.959950
28.50	-.745435	-.888477	-.888477	-1.595518	2.233929	1.947690
29.00	-.748284	-.895113	-.895113	-1.567741	2.209285	1.936042
29.50	-.751219	-.901918	-.901918	-1.540973	2.185727	1.924989
30.00	-.754242	-.908897	-.908897	-1.515162	2.163207	1.914513
30.50	-.757353	-.916055	-.916055	-1.490263	2.141678	1.904600
31.00	-.760554	-.923397	-.923397	-1.466230	2.121099	1.895234
31.50	-.763847	-.930928	-.930928	-1.443022	2.101429	1.886403
32.00	-.767234	-.938653	-.938653	-1.420501	2.082632	1.878094
32.50	-.770716	-.946579	-.946579	-1.398930	2.064672	1.870295
33.00	-.774295	-.954710	-.954710	-1.377976	2.047519	1.862995
33.50	-.777972	-.963053	-.963053	-1.357705	2.031140	1.856185
34.00	-.781750	-.971615	-.971615	-1.338089	2.015509	1.849855
34.50	-.785630	-.980402	-.980402	-1.319098	2.000598	1.843997
35.00	-.789615	-.989420	-.989420	-1.300706	1.986383	1.838603
35.50	-.793706	-.998679	-.998679	-1.282887	1.972841	1.833666
36.00	-.797906	-1.008183	-1.008183	-1.265618	1.959950	1.829179
36.50	-.802217	-1.017943	-1.017943	-1.248876	1.947690	1.825136
37.00	-.806642	-1.027966	-1.027966	-1.232640	1.936042	1.821533
37.50	-.811182	-1.038260	-1.038260	-1.216889	1.924989	1.818364
38.00	-.815840	-1.048836	-1.048836	-1.201605	1.914513	1.815626
38.50	-.820619	-1.059701	-1.059701	-1.186770	1.904600	1.813315
39.00	-.825521	-1.070867	-1.070867	-1.172365	1.895234	1.811429
39.50	-.830550	-1.082343	-1.082343	-1.158376	1.886403	1.809964
40.00	-.835708	-1.094141	-1.094141	-1.144787	1.878094	1.808918
40.50	-.840999	-1.106272	-1.106272	-1.131582	1.870295	1.808292
41.00	-.846423	-1.118748	-1.118748	-1.118748	1.862995	1.808083
41.50	-.851987	-1.131582	-1.131582	-1.106272	1.856185	1.808292
42.00	-.857693	-1.144787	-1.144787	-1.094141	1.849855	1.808918
42.50	-.863544	-1.158376	-1.158376	-1.082343	1.843997	1.809964
43.00	-.869544	-1.172365	-1.172365	-1.070867	1.838603	1.811429
43.50	-.875697	-1.186770	-1.186770	-1.059701	1.833666	1.813315
44.00	-.882007	-1.201605	-1.201605	-1.048836	1.829179	1.815626
44.50	-.888477	-1.216889	-1.216889	-1.038260	1.825136	1.818364
45.00	-.895113	-1.232640	-1.232640	-1.027966	1.821533	1.821533
45.50	-.901918	-1.248876	-1.248876	-1.017943	1.818364	1.825136
46.00	-.908897	-1.265618	-1.265618	-1.008183	1.815626	1.829179
46.50	-.916055	-1.282887	-1.282887	-.998679	1.813315	1.833666
47.00	-.923397	-1.300706	-1.300706	-.989420	1.811429	1.838603
47.50	-.930928	-1.319098	-1.319098	-.980402	1.809964	1.843997
48.00	-.938653	-1.338089	-1.338089	-.971615	1.808918	1.849855
48.50	-.946579	-1.357705	-1.357705	-.963053	1.808292	1.856185
49.00	-.954710	-1.377976	-1.377976	-.954710	1.808083	1.862995
49.50	-.963053	-1.398930	-1.398930	-.946579	1.808292	1.870295
50.00	-.971615	-1.420501	-1.420501	-.938653	1.808918	1.878094
50.50	-.980402	-1.443022	-1.443022	-.930928	1.809964	1.886403
51.00	-.989420	-1.466230	-1.466230	-.923397	1.811429	1.895234
51.50	-.998679	-1.490263	-1.490263	-.916055	1.813315	1.904600
52.00	-1.008183	-1.515162	-1.515162	-.908897	1.815626	1.914513
52.50	-1.017943	-1.540973	-1.540973	-.901918	1.818364	1.924989
53.00	-1.027966	-1.567741	-1.567741	-.895113	1.821533	1.936042
53.50	-1.038260	-1.595518	-1.595518	-.888477	1.825136	1.947690
54.00	-1.048836	-1.624358	-1.624358	-.882007	1.829179	1.959950
54.50	-1.059701	-1.654318	-1.654318	-.875697	1.833666	1.972841
55.00	-1.070867	-1.685462	-1.685462	-.869544	1.838603	1.986383

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<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
55.50	-1.082343	-1.717855	-1.717855	-.863544	1.843997	2.000598
56.00	-1.074141	-1.751572	-1.751572	-.857693	1.849855	2.015509
56.50	-1.105272	-1.786689	-1.786689	-.851987	1.856185	2.031140
57.00	-1.118748	-1.823290	-1.823290	-.846423	1.862995	2.047519
57.50	-1.131582	-1.861468	-1.861468	-.840998	1.870295	2.064672
58.00	-1.144787	-1.901320	-1.901320	-.835708	1.878094	2.082632
58.50	-1.158376	-1.942954	-1.942954	-.830550	1.886403	2.101429
59.00	-1.172365	-1.986486	-1.986486	-.825521	1.895234	2.121099
59.50	-1.186770	-2.032043	-2.032043	-.820619	1.904600	2.141678
60.00	-1.201605	-2.079765	-2.079765	-.815940	1.914513	2.163207
60.50	-1.216889	-2.129801	-2.129801	-.811182	1.924989	2.185727
61.00	-1.232640	-2.182317	-2.182317	-.806642	1.936042	2.209285
61.50	-1.248876	-2.237496	-2.237496	-.802217	1.947690	2.233929
62.00	-1.265518	-2.295539	-2.295539	-.797906	1.959950	2.259712
62.50	-1.282687	-2.356664	-2.356664	-.793706	1.972841	2.286692
63.00	-1.300306	-2.421117	-2.421117	-.789615	1.986383	2.314928
63.50	-1.319098	-2.489168	-2.489168	-.785630	2.000598	2.344487
64.00	-1.338889	-2.561117	-2.561117	-.781750	2.015509	2.375440
64.50	-1.359705	-2.637299	-2.637299	-.777972	2.031140	2.407864
65.00	-1.381575	-2.718088	-2.718088	-.774295	2.047519	2.441841
65.50	-1.404530	-2.803904	-2.803904	-.770716	2.064672	2.477462
66.00	-1.428601	-2.895218	-2.895218	-.767234	2.082632	2.514825
66.50	-1.453822	-2.992565	-2.992565	-.763947	2.101429	2.554035
67.00	-1.480230	-3.096547	-3.096547	-.760854	2.121099	2.595208
67.50	-1.507826	-3.207853	-3.207853	-.757953	2.141678	2.638471
68.00	-1.536562	-3.327267	-3.327267	-.755242	2.163207	2.683959
68.50	-1.566473	-3.455693	-3.455693	-.752719	2.185727	2.731825
69.00	-1.597611	-3.594171	-3.594171	-.750284	2.209285	2.782232
69.50	-1.630018	-3.743908	-3.743908	-.747935	2.233929	2.835361
70.00	-1.663735	-3.906314	-3.906314	-.745671	2.259712	2.891413
70.50	-1.698814	-4.083042	-4.083042	-.743590	2.286692	2.950607
71.00	-1.735302	-4.276046	-4.276046	-.741739	2.314928	3.013185
71.50	-1.773255	-4.487655	-4.487655	-.740073	2.344487	3.079420
72.00	-1.812712	-4.720660	-4.720660	-.738574	2.375440	3.149609
72.50	-1.853789	-4.978442	-4.978442	-.737205	2.407864	3.224086
73.00	-1.896500	-5.263132	-5.263132	-.735973	2.441841	3.303225
73.50	-1.940868	-5.575834	-5.575834	-.735887	2.477462	3.387446
74.00	-1.986920	-5.916929	-5.916929	-.735957	2.514825	3.477219
74.50	-1.942954	-6.285447	-6.285447	-.736102	2.554035	3.573070
75.00	-1.999886	-6.682429	-6.682429	-.736420	2.595208	3.675623
75.50	-2.057643	-7.105912	-7.105912	-.736911	2.638471	3.785544
76.00	-2.017105	-7.557254	-7.557254	-.737574	2.683959	3.903527
76.50	-2.124901	-8.043488	-8.043488	-.738409	2.731825	4.030771
77.00	-2.182317	-8.560571	-8.560571	-.739414	2.782232	4.168018
77.50	-2.237496	-9.109473	-9.109473	-.740588	2.835361	4.316574
78.00	-2.295539	-9.691132	-9.691132	-.741932	2.891413	4.477849
78.50	-2.356664	-10.307809	-10.307809	-.743444	2.950607	4.653495
79.00	-2.421117	-10.962270	-10.962270	-.745124	3.013185	4.845467
79.50	-2.489168	-11.655400	-11.655400	-.746971	3.079420	5.056091
80.00	-2.561117	-12.391963	-12.391963	-.749084	3.149609	5.288160
80.50	-2.637299	-13.177412	-13.177412	-.751364	3.224086	5.545053
81.00	-2.718088	-14.018108	-14.018108	-.7538109	3.303225	5.830902
81.50	-2.803904	-14.92453	-14.92453	-.756429	3.387446	6.150810
82.00						
82.50						
83.00	-3.096547	49.746579	49.746579	-.697137	3.675623	7.387803

θ	R_0	R_2	R_4	R_6	R_8	R_7
83.50	-3.207053	33.261095	33.261095	-.696303	3.785544	7.928078
84.00	-3.321267	25.020801	25.020801	-.695532	3.903627	8.558967
84.50	-3.455693	20.077839	20.077839	-.694825	4.030771	9.305172
85.00	-3.594171	16.783555	16.783555	-.694180	4.168018	10.201288
85.50	-3.743708	14.431384	14.431384	-.693596	4.316574	11.297264
86.00	-3.903634	12.668043	12.668043	-.693075	4.477849	12.668043
86.50	-4.0733042	11.297264	11.297264	-.692616	4.653495	14.431384
87.00	-4.252046	10.201288	10.201288	-.692219	4.845467	16.783555
87.50	-4.4397055	9.305175	9.305175	-.691882	5.056091	20.077839
88.00	-4.720060	8.558967	8.558967	-.691608	5.288160	25.020801
88.50	-4.978442	7.928078	7.928078	-.691394	5.545053	33.261095
89.00	-5.265132	7.387803	7.387803	-.691241	5.830902	49.744679
89.50	-5.535034	6.920025	6.920025	-.691150	6.150810	99.201357
90.00						
90.50	-6.356497	6.150810	6.150810	-.691150	6.920025	-98.642853
91.00	-6.824727	5.830902	5.830902	-.691241	7.387803	-49.186108
91.50	-7.305812	5.545053	5.545053	-.691394	7.928078	-32.702412
92.00	-7.971264	5.288160	5.288160	-.691608	8.558967	-24.461963
92.50	-8.743788	5.056091	5.056091	-.691882	9.305175	-19.518800
93.00	-9.643711	4.845467	4.845467	-.692219	10.201288	-16.224270
93.50	-10.673673	4.653495	4.653495	-.692616	11.297264	-13.871809
94.00	-12.108132	4.477849	4.477849	-.693075	12.668043	-12.108132
94.50	-13.871809	4.316574	4.316574	-.693596	14.431384	-10.736973
95.00	-16.224270	4.168018	4.168018	-.694180	16.783555	-9.640571
95.50	-19.518800	4.030771	4.030771	-.694825	20.077839	-8.743988
96.00	-24.461963	3.903627	3.903627	-.695532	25.020801	-7.997264
96.50	-32.702412	3.785544	3.785544	-.696303	33.261095	-7.365812
97.00	-49.744679	3.675623	3.675623	-.697137	49.744679	-6.824929
97.50	-98.642853	3.573076	3.573076	-.698034	99.201357	-6.356497
98.00						
98.50						
99.00	49.744679	3.303225	3.303225	-.701109	-49.186108	-5.265132
99.50	33.261095	3.224086	3.224086	-.702264	-32.702412	-4.978442
100.00	25.020801	3.149609	3.149609	-.703484	-24.461963	-4.720660
100.50	20.077839	3.079420	3.079420	-.704771	-19.518800	-4.487655
101.00	16.783555	3.013186	3.013186	-.706124	-16.224270	-4.276046
101.50	14.431384	2.950607	2.950607	-.707544	-13.871809	-4.083042
102.00	12.668043	2.891413	2.891413	-.709032	-12.108132	-3.906314
102.50	11.297264	2.835361	2.835361	-.710588	-10.736973	-3.743908
103.00	10.201288	2.782232	2.782232	-.712214	-9.640571	-3.594171
103.50	9.305175	2.731425	2.731425	-.713909	-8.743988	-3.455693
104.00	8.558967	2.683459	2.683459	-.715674	-7.997264	-3.327267
104.50	7.928078	2.638471	2.638471	-.717511	-7.365812	-3.207853
105.00	7.387803	2.595208	2.595208	-.719420	-6.824929	-3.096547
105.50	6.920025	2.554035	2.554035	-.721402	-6.356497	-2.992565
106.00	6.535034	2.514425	2.514425	-.723457	-5.946929	-2.895218
106.50	6.150810	2.477462	2.477462	-.725587	-5.585874	-2.803404
107.00	5.830902	2.443441	2.443441	-.727793	-5.265132	-2.718088
107.50	5.545053	2.411464	2.411464	-.730075	-4.978442	-2.637299
108.00	5.288160	2.381440	2.381440	-.732434	-4.720660	-2.561117
108.50	5.056091	2.353407	2.353407	-.734873	-4.487655	-2.489168
109.00	4.845467	2.327423	2.327423	-.737391	-4.276046	-2.421117
109.50	4.653495	2.303492	2.303492	-.739990	-4.083042	-2.356664
110.00	4.477849	2.281712	2.281712	-.742671	-3.906314	-2.295539
110.50	4.316574	2.261929	2.261929	-.745435	-3.743988	-2.237496
111.00	4.168018	2.244245	2.244245	-.748284	-3.594171	-2.182317

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
111.50	4.030771	2.185727	2.185727	-.751219	-3.455693	-2.129801
112.00	3.903627	2.163207	2.163207	-.754242	-3.327267	-2.079765
112.50	3.785544	2.141678	2.141678	-.757353	-3.207853	-2.032043
113.00	3.675623	2.121099	2.121099	-.760554	-3.096547	-1.986486
113.50	3.573076	2.101429	2.101429	-.763847	-2.992565	-1.942954
114.00	3.477219	2.082632	2.082632	-.767234	-2.895218	-1.901320
114.50	3.387446	2.064672	2.064672	-.770716	-2.803904	-1.861468
115.00	3.303225	2.047519	2.047519	-.774295	-2.718088	-1.823290
115.50	3.224086	2.031140	2.031140	-.777972	-2.637299	-1.786689
116.00	3.149609	2.015509	2.015509	-.781750	-2.561117	-1.751572
116.50	3.079420	2.000598	2.000598	-.785630	-2.489168	-1.717855
117.00	3.013186	1.986383	1.986383	-.789615	-2.421117	-1.685462
117.50	2.950607	1.972841	1.972841	-.793705	-2.356664	-1.654318
118.00	2.891413	1.959950	1.959950	-.797906	-2.295539	-1.624358
118.50	2.835361	1.947690	1.947690	-.802217	-2.237496	-1.595518
119.00	2.782232	1.936042	1.936042	-.806642	-2.182317	-1.567741
119.50	2.731825	1.924989	1.924989	-.811182	-2.129801	-1.540973
120.00	2.683959	1.914513	1.914513	-.815840	-2.079765	-1.515162
120.50	2.638471	1.904600	1.904600	-.820619	-2.032043	-1.490263
121.00	2.595208	1.895234	1.895234	-.825521	-1.986486	-1.466230
121.50	2.554035	1.886403	1.886403	-.830558	-1.942954	-1.443022
122.00	2.514825	1.878094	1.878094	-.835708	-1.901320	-1.420601
122.50	2.477462	1.870295	1.870295	-.840998	-1.861468	-1.398930
123.00	2.441841	1.862995	1.862995	-.846423	-1.823290	-1.377976
123.50	2.407864	1.856185	1.856185	-.851987	-1.786689	-1.357705
124.00	2.375440	1.849855	1.849855	-.857693	-1.751572	-1.338089
124.50	2.344487	1.843997	1.843997	-.863544	-1.717855	-1.319098
125.00	2.314928	1.838603	1.838603	-.869544	-1.685462	-1.300706
125.50	2.286692	1.833666	1.833666	-.875697	-1.654318	-1.282887
126.00	2.259712	1.829179	1.829179	-.882007	-1.624358	-1.265618
126.50	2.233929	1.825136	1.825136	-.888477	-1.595518	-1.248876
127.00	2.209285	1.821533	1.821533	-.895113	-1.567741	-1.232640
127.50	2.185727	1.818364	1.818364	-.901918	-1.540973	-1.216889
128.00	2.163207	1.815626	1.815626	-.908897	-1.515162	-1.201605
128.50	2.141678	1.813315	1.813315	-.916055	-1.490263	-1.186770
129.00	2.121099	1.811429	1.811429	-.923397	-1.466230	-1.172365
129.50	2.101429	1.809964	1.809964	-.930928	-1.443022	-1.158376
130.00	2.082632	1.808918	1.808918	-.938653	-1.420601	-1.144787
130.50	2.064672	1.808292	1.808292	-.946579	-1.398930	-1.131582
131.00	2.047519	1.808083	1.808083	-.954710	-1.377976	-1.118746
131.50	2.031140	1.808292	1.808292	-.963053	-1.357705	-1.106272
132.00	2.015509	1.808918	1.808918	-.971615	-1.338089	-1.094141
132.50	2.000598	1.809964	1.809964	-.980402	-1.319098	-1.082343
133.00	1.986383	1.811429	1.811429	-.989420	-1.300706	-1.070867
133.50	1.972841	1.813315	1.813315	-.998679	-1.282887	-1.059701
134.00	1.959950	1.815626	1.815626	-1.008183	-1.265618	-1.048836
134.50	1.947690	1.818364	1.818364	-1.017943	-1.248876	-1.038260
135.00	1.936042	1.821533	1.821533	-1.027966	-1.232640	-1.027966
135.50	1.924989	1.825136	1.825136	-1.038260	-1.216889	-1.017943
136.00	1.914513	1.829179	1.829179	-1.048836	-1.201605	-1.008183
136.50	1.904600	1.833666	1.833666	-1.059701	-1.186770	-.998679
137.00	1.895234	1.838603	1.838603	-1.070867	-1.172365	-.989420
137.50	1.886403	1.843997	1.843997	-1.082343	-1.158376	-.980402
138.00	1.878094	1.849855	1.849855	-1.094141	-1.144787	-.971615
138.50	1.870295	1.856185	1.856185	-1.106272	-1.131582	-.963053
139.00	1.862995	1.862995	1.862995	-1.118746	-1.118746	-.954710

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
139.50	1.856185	1.870295	1.870295	-1.131582	-1.106272	-.946579
140.00	1.849855	1.878094	1.878094	-1.144787	-1.094141	-.938653
140.50	1.843997	1.886403	1.886403	-1.158376	-1.082343	-.930928
141.00	1.838503	1.895234	1.895234	-1.172365	-1.070867	-.923397
141.50	1.833666	1.904600	1.904600	-1.186770	-1.059701	-.916055
142.00	1.829179	1.914513	1.914513	-1.201605	-1.048836	-.908897
142.50	1.825136	1.924989	1.924989	-1.216889	-1.038260	-.901918
143.00	1.821533	1.936042	1.936042	-1.232640	-1.027966	-.895113
143.50	1.818364	1.947690	1.947690	-1.248876	-1.017943	-.888477
144.00	1.815626	1.959950	1.959950	-1.265618	-1.008183	-.882007
144.50	1.813315	1.972841	1.972841	-1.282887	-.998679	-.875697
145.00	1.811429	1.986383	1.986383	-1.300706	-.989420	-.869544
145.50	1.809964	2.000598	2.000598	-1.319098	-.980402	-.863544
146.00	1.808918	2.015509	2.015509	-1.338089	-.971615	-.857693
146.50	1.808292	2.031140	2.031140	-1.357705	-.963053	-.851987
147.00	1.808083	2.047519	2.047519	-1.377976	-.954710	-.846423
147.50	1.808292	2.064672	2.064672	-1.398930	-.946579	-.840998
148.00	1.808918	2.082632	2.082632	-1.420601	-.938653	-.835708
148.50	1.809964	2.101429	2.101429	-1.443022	-.930928	-.830550
149.00	1.811429	2.121099	2.121099	-1.466230	-.923397	-.825521
149.50	1.813315	2.141678	2.141678	-1.490263	-.916055	-.820619
150.00	1.815626	2.163207	2.163207	-1.515162	-.908897	-.815840
150.50	1.818364	2.185727	2.185727	-1.540973	-.901918	-.811182
151.00	1.821533	2.209285	2.209285	-1.567741	-.895113	-.806642
151.50	1.825136	2.233929	2.233929	-1.595518	-.888477	-.802217
152.00	1.829179	2.259712	2.259712	-1.624358	-.882007	-.797906
152.50	1.833666	2.286692	2.286692	-1.654318	-.875697	-.793706
153.00	1.838503	2.314928	2.314928	-1.685462	-.869544	-.789615
153.50	1.843997	2.344437	2.344437	-1.717855	-.863544	-.785630
154.00	1.849855	2.375440	2.375440	-1.751572	-.857693	-.781750
154.50	1.856185	2.407864	2.407864	-1.786689	-.851987	-.777972
155.00	1.862995	2.441841	2.441841	-1.823290	-.846423	-.774295
155.50	1.870295	2.477462	2.477462	-1.861468	-.840998	-.770716
156.00	1.878094	2.514825	2.514825	-1.901320	-.835708	-.767234
156.50	1.886403	2.554035	2.554035	-1.942954	-.830550	-.763847
157.00	1.895234	2.595208	2.595208	-1.986486	-.825521	-.760554
157.50	1.904600	2.638471	2.638471	-2.032043	-.820619	-.757353
158.00	1.914513	2.683959	2.683959	-2.079765	-.815840	-.754242
158.50	1.924989	2.731425	2.731425	-2.129401	-.811182	-.751219
159.00	1.936042	2.782232	2.782232	-2.182317	-.806642	-.748284
159.50	1.947690	2.835361	2.835361	-2.237195	-.802217	-.745435
160.00	1.959950	2.891413	2.891413	-2.295539	-.797906	-.742671
160.50	1.972841	2.950607	2.950607	-2.356664	-.793706	-.739990
161.00	1.986383	3.013186	3.013186	-2.421117	-.789615	-.737391
161.50	2.000598	3.079420	3.079420	-2.489168	-.785630	-.734873
162.00	2.015509	3.149509	3.149509	-2.561117	-.781750	-.732434
162.50	2.031140	3.224046	3.224046	-2.637299	-.777972	-.730075
163.00	2.047519	3.303225	3.303225	-2.718084	-.774295	-.727793
163.50	2.064672	3.387446	3.387446	-2.803904	-.770716	-.725547
164.00	2.082632	3.477219	3.477219	-2.895214	-.767234	-.723457
164.50	2.101429	3.573076	3.573076	-2.992565	-.763847	-.721402
165.00	2.121099	3.675623	3.675623	-3.096547	-.760554	-.719420
165.50	2.141678	3.785544	3.785544	-3.207853	-.757353	-.717511
166.00	2.163207	3.903427	3.903427	-3.327267	-.754242	-.715674
166.50	2.185727	4.030771	4.030771	-3.455693	-.751219	-.713909
167.00	2.209285	4.164018	4.164018	-3.594171	-.748284	-.712214

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
167.50	2.233929	4.316574	4.316574	-3.743908	-.745435	-.710588
168.00	2.259712	4.477349	4.477849	-3.906314	-.742671	-.709032
168.50	2.286692	4.653495	4.653495	-4.083042	-.739990	-.707544
169.00	2.314928	4.845467	4.845467	-4.276046	-.737391	-.706124
169.50	2.344487	5.056091	5.056091	-4.487655	-.734873	-.704771
170.00	2.375440	5.288160	5.288160	-4.720660	-.732434	-.703484
170.50	2.407864	5.545053	5.545053	-4.978442	-.730075	-.702264
171.00	2.441841	5.830902	5.830902	-5.265132	-.727793	-.701109
171.50	2.477462	6.150810	6.150810	-5.585834	-.725587	-.700020
172.00	2.514825	6.511156	6.511158	-5.946929	-.723457	-.698995
172.50	2.554035	6.920025	6.920025	-6.356497	-.721402	-.698034
173.00	2.595208	7.387803	7.387803	-6.824929	-.719420	-.697137
173.50	2.638471	7.928078	7.928078	-7.365812	-.717511	-.696303
174.00	2.683959	8.558967	8.558967	-7.997264	-.715674	-.695532
174.50	2.731825	9.305175	9.305175	-8.743988	-.713909	-.694825
175.00	2.782232	10.201288	10.201288	-9.640571	-.712214	-.694180
175.50	2.835361	11.297264	11.297264	-10.736973	-.710588	-.693596
176.00	2.891413	12.668043	12.668043	-12.108132	-.709032	-.693075
176.50	2.950607	14.431384	14.431384	-13.871809	-.707544	-.692616
177.00	3.013186	16.783555	16.783555	-16.224270	-.706124	-.692219
177.50	3.079420	20.077839	20.077839	-19.518800	-.704771	-.691882
178.00	3.149509	25.020801	25.020801	-24.461963	-.703484	-.691608
178.50	3.224086	33.261095	33.261095	-32.702412	-.702264	-.691394
179.00	3.303225	49.744679	49.744679	-49.186108	-.701109	-.691241
179.50	3.387446	99.201357	99.201357	-98.642853	-.700020	-.691150
180.00						

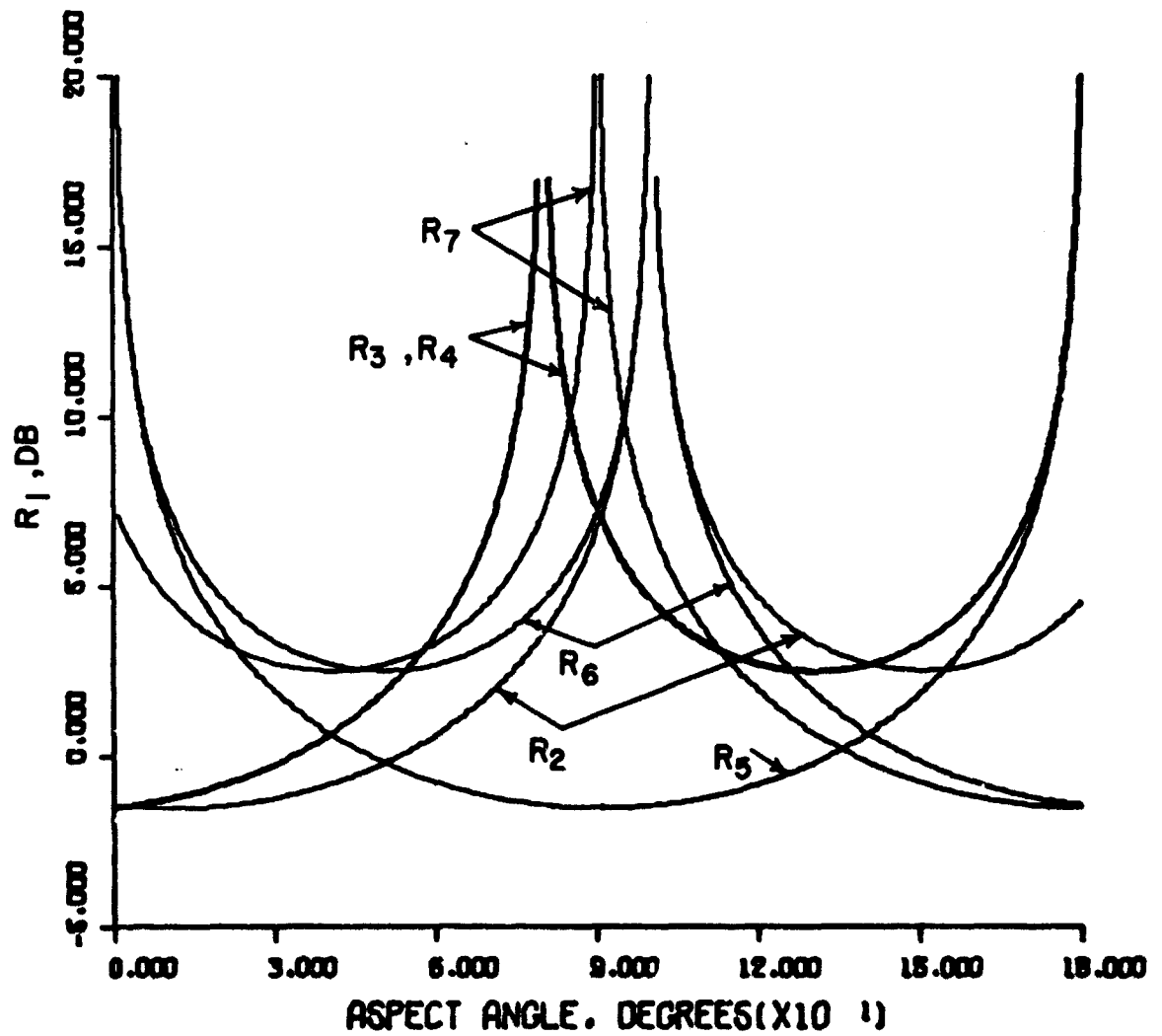


FIGURE A-11. DIFFRACTION COEFFICIENTS
 $(\alpha = 10 \text{ deg, } n = 3/2 + \alpha/\pi,$
 $R_1 = -0.697407)$

TABLE A-12. DIFFRACTION COEFFICIENTS
 $(\alpha = 10 \text{ deg}, n = 3/2 + \alpha/\pi, R_1 = -0.697407)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.708593	-.711109	-.711109	-98.658783	99.193311	5.041879
1.00	-.707434	-.712467	-.712467	-49.199925	49.734516	4.831108
1.50	-.706340	-.713893	-.713893	-32.715464	33.250158	4.638987
2.00	-.705311	-.715386	-.715386	-24.474587	25.009426	4.463190
2.50	-.704347	-.716948	-.716948	-19.531133	20.066159	4.301763
3.00	-.703447	-.718579	-.718579	-16.236381	16.771635	4.153051
3.50	-.702610	-.720281	-.720281	-13.983736	14.419261	4.015647
4.00	-.701836	-.722053	-.722053	-12.119902	12.655739	3.888344
4.50	-.701126	-.723896	-.723896	-10.748603	11.284793	3.770100
5.00	-.700474	-.725812	-.725812	-9.652074	10.188660	3.660013
5.50	-.699893	-.727801	-.727801	-8.755372	9.292396	3.557300
6.00	-.699370	-.729864	-.729864	-8.008537	8.546041	3.461272
6.50	-.698909	-.732002	-.732002	-7.376981	7.915008	3.371326
7.00	-.698510	-.734215	-.734215	-6.835998	7.374590	3.286930
7.50	-.698173	-.736505	-.736505	-6.367471	6.906671	3.207612
8.00	-.697897	-.738874	-.738874	-5.957811	6.497662	3.132953
8.50	-.697682	-.741321	-.741321	-5.596627	6.137173	3.062579
9.00	-.697529	-.743848	-.743848	-5.275834	5.817122	2.996156
9.50	-.697437	-.746456	-.746456	-4.989065	5.531130	2.933385
10.00	-.697407	-.749146	-.749146	-4.731201	5.274093	2.873995
10.50	-.697437	-.751920	-.751920	-4.498117	5.041879	2.817743
11.00	-.697529	-.754779	-.754779	-4.286431	4.831108	2.764410
11.50	-.697682	-.757725	-.757725	-4.093350	4.638987	2.713796
12.00	-.697897	-.760758	-.760758	-3.916549	4.463190	2.665719
12.50	-.698173	-.763879	-.763879	-3.754071	4.301763	2.620016
13.00	-.698510	-.767092	-.767092	-3.604262	4.153051	2.576534
13.50	-.698893	-.770396	-.770396	-3.465715	4.015647	2.535137
14.00	-.699370	-.773795	-.773795	-3.337221	3.888344	2.495698
14.50	-.699893	-.777288	-.777288	-3.217740	3.770100	2.458102
15.00	-.700474	-.780879	-.780879	-3.106369	3.660013	2.422243
15.50	-.701126	-.784569	-.784569	-3.002322	3.557390	2.388023
16.00	-.701836	-.788359	-.788359	-2.904913	3.461272	2.355352
16.50	-.702610	-.792253	-.792253	-2.813536	3.371326	2.324146
17.00	-.703447	-.796251	-.796251	-2.727659	3.286930	2.294328
17.50	-.704347	-.800356	-.800356	-2.646810	3.207612	2.265828
18.00	-.705311	-.804569	-.804569	-2.570569	3.132953	2.238580
18.50	-.706340	-.808895	-.808895	-2.498562	3.062579	2.212521
19.00	-.707434	-.813333	-.813333	-2.430455	2.996156	2.187596
19.50	-.708593	-.817888	-.817888	-2.365946	2.933385	2.163751
20.00	-.709818	-.822561	-.822561	-2.304765	2.873995	2.140937
20.50	-.711109	-.827355	-.827355	-2.246669	2.817743	2.119109
21.00	-.712467	-.832273	-.832273	-2.191436	2.764410	2.098223
21.50	-.713893	-.837318	-.837318	-2.139967	2.713796	2.078239
22.00	-.715386	-.842492	-.842492	-2.091779	2.665719	2.059121
22.50	-.716948	-.847798	-.847798	-2.046007	2.620016	2.040834
23.00	-.718579	-.853240	-.853240	-1.993400	2.576534	2.023344
23.50	-.720281	-.858821	-.858821	-1.951914	2.535137	2.006622
24.00	-.722053	-.864544	-.864544	-1.911036	2.495698	1.990639
24.50	-.723896	-.870413	-.870413	-1.871236	2.458102	1.975369
25.00	-.725812	-.876431	-.876431	-1.832011	2.422243	1.960786
25.50	-.727801	-.882603	-.882603	-1.793363	2.388023	1.946867
26.00	-.729864	-.888931	-.888931	-1.756201	2.355352	1.933590
26.50	-.732002	-.895421	-.895421	-1.720443	2.324146	1.920934
27.00	-.734215	-.902076	-.902076	-1.686002	2.294328	1.908881

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θ	R_2	R_3	R_4	R_5	R_6	R_7
27.50	-.736505	-.908901	-.908901	-1.662815	2.265828	1.897412
28.00	-.738874	-.915900	-.915900	-1.632811	2.238580	1.886511
28.50	-.741321	-.923078	-.923078	-1.603929	2.212521	1.876161
29.00	-.743848	-.930441	-.930441	-1.576111	2.187596	1.866348
29.50	-.746456	-.937993	-.937993	-1.549301	2.163751	1.857058
30.00	-.749146	-.945740	-.945740	-1.523450	2.140937	1.848278
30.50	-.751920	-.953687	-.953687	-1.498511	2.119109	1.839996
31.00	-.754779	-.961840	-.961840	-1.474439	2.098223	1.832201
31.50	-.757725	-.970206	-.970206	-1.451193	2.078239	1.824882
32.00	-.760758	-.978791	-.978791	-1.428734	2.059121	1.818030
32.50	-.763879	-.987601	-.987601	-1.407025	2.040834	1.811636
33.00	-.767092	-.996643	-.996643	-1.386034	2.023344	1.805691
33.50	-.770396	-1.005925	-1.005925	-1.365727	2.006622	1.800188
34.00	-.773795	-1.015454	-1.015454	-1.346075	1.990639	1.795119
34.50	-.777288	-1.025239	-1.025239	-1.327049	1.975369	1.790479
35.00	-.780879	-1.035287	-1.035287	-1.308622	1.960786	1.786261
35.50	-.784569	-1.045607	-1.045607	-1.290769	1.946867	1.782461
36.00	-.788359	-1.056208	-1.056208	-1.273466	1.933590	1.779073
36.50	-.792253	-1.067100	-1.067100	-1.256691	1.920934	1.776093
37.00	-.796251	-1.078293	-1.078293	-1.240422	1.908881	1.773518
37.50	-.800356	-1.089796	-1.089796	-1.224639	1.897412	1.771344
38.00	-.804569	-1.101622	-1.101622	-1.209323	1.886511	1.769569
38.50	-.808895	-1.113781	-1.113781	-1.194456	1.876161	1.768191
39.00	-.813333	-1.126286	-1.126286	-1.180021	1.866348	1.767208
39.50	-.817888	-1.139148	-1.139148	-1.166002	1.857058	1.766618
40.00	-.822561	-1.152382	-1.152382	-1.152382	1.848278	1.766422
40.50	-.827355	-1.166002	-1.166002	-1.139148	1.839996	1.766618
41.00	-.832273	-1.180021	-1.180021	-1.126286	1.832201	1.767208
41.50	-.837314	-1.194456	-1.194456	-1.113781	1.824882	1.768191
42.00	-.842492	-1.209323	-1.209323	-1.101622	1.818030	1.769569
42.50	-.847798	-1.224639	-1.224639	-1.089796	1.811636	1.771344
43.00	-.853240	-1.240422	-1.240422	-1.078293	1.805691	1.773518
43.50	-.858821	-1.256691	-1.256691	-1.067100	1.800188	1.776093
44.00	-.864544	-1.273466	-1.273466	-1.056208	1.795119	1.779073
44.50	-.870413	-1.290769	-1.290769	-1.045607	1.790479	1.782461
45.00	-.876431	-1.308622	-1.308622	-1.035287	1.786261	1.786261
45.50	-.882603	-1.327049	-1.327049	-1.025239	1.782461	1.790479
46.00	-.888931	-1.346075	-1.346075	-1.015454	1.779073	1.795119
46.50	-.895421	-1.365727	-1.365727	-1.005925	1.776093	1.800188
47.00	-.902076	-1.386034	-1.386034	-.996643	1.773518	1.805691
47.50	-.908890	-1.407025	-1.407025	-.987601	1.771344	1.811636
48.00	-.915900	-1.428734	-1.428734	-.978791	1.769569	1.818030
48.50	-.923078	-1.451193	-1.451193	-.970206	1.768191	1.824882
49.00	-.930441	-1.474439	-1.474439	-.961840	1.767208	1.832201
49.50	-.937993	-1.498511	-1.498511	-.953687	1.766618	1.839996
50.00	-.945740	-1.523450	-1.523450	-.945740	1.766422	1.848278
50.50	-.953687	-1.549301	-1.549301	-.937993	1.766618	1.857058
51.00	-.961840	-1.576111	-1.576111	-.930441	1.767208	1.866348
51.50	-.970206	-1.603929	-1.603929	-.923078	1.768191	1.876161
52.00	-.978791	-1.632811	-1.632811	-.915900	1.769569	1.886511
52.50	-.987601	-1.662815	-1.662815	-.908901	1.771344	1.897412
53.00	-.996643	-1.694002	-1.694002	-.902076	1.773518	1.908881
53.50	-1.005925	-1.726440	-1.726440	-.895421	1.776093	1.920934
54.00	-.915454	-1.760201	-1.760201	-.888931	1.779073	1.933590
54.50	-1.025239	-1.795383	-1.795383	-.882603	1.782461	1.946867
55.00	-1.035287	-1.832011	-1.832011	-.876431	1.786261	1.960786

<u>θ</u>	<u>R_0</u>	<u>R_0</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
55.50	-1.045607	-1.870236	-1.870236	-.870413	1.790479	1.975369
56.00	-1.056208	-1.910136	-1.910136	-.864544	1.795119	1.990639
56.50	-1.067100	-1.951818	-1.951818	-.858821	1.800188	2.006622
57.00	-1.078293	-1.995400	-1.995400	-.853240	1.805691	2.023344
57.50	-1.089796	-2.041007	-2.041007	-.847798	1.811636	2.040834
58.00	-1.101622	-2.088779	-2.088779	-.842492	1.818030	2.059121
58.50	-1.113781	-2.138867	-2.138867	-.837318	1.824882	2.078239
59.00	-1.126286	-2.191436	-2.191436	-.832273	1.832201	2.098223
59.50	-1.139148	-2.246669	-2.246669	-.827355	1.839996	2.119109
60.00	-1.152382	-2.304765	-2.304765	-.822561	1.848278	2.140937
60.50	-1.166002	-2.365946	-2.365946	-.817888	1.857058	2.163751
61.00	-1.180021	-2.430455	-2.430455	-.813333	1.866348	2.187596
61.50	-1.194456	-2.498562	-2.498562	-.808895	1.876161	2.212521
62.00	-1.209323	-2.570569	-2.570569	-.804569	1.886511	2.238580
62.50	-1.224639	-2.646810	-2.646810	-.800356	1.897412	2.265828
63.00	-1.240422	-2.727659	-2.727659	-.796251	1.908881	2.294328
63.50	-1.256691	-2.813536	-2.813536	-.792253	1.920934	2.324146
64.00	-1.273466	-2.904913	-2.904913	-.788359	1.933590	2.355352
64.50	-1.290769	-3.002322	-3.002322	-.784569	1.946867	2.388023
65.00	-1.308622	-3.106369	-3.106369	-.780879	1.960786	2.422243
65.50	-1.327049	-3.217740	-3.217740	-.777288	1.975369	2.458102
66.00	-1.346075	-3.337221	-3.337221	-.773795	1.990639	2.495698
66.50	-1.365727	-3.465715	-3.465715	-.770396	2.006622	2.535137
67.00	-1.386034	-3.604262	-3.604262	-.767092	2.023344	2.576534
67.50	-1.407025	-3.754071	-3.754071	-.763879	2.040834	2.620016
68.00	-1.428734	-3.916549	-3.916549	-.760758	2.059121	2.665719
68.50	-1.451193	-4.093350	-4.093350	-.757725	2.078239	2.713796
69.00	-1.474439	-4.286431	-4.286431	-.754779	2.098223	2.764410
69.50	-1.498511	-4.498117	-4.498117	-.751920	2.119109	2.817743
70.00	-1.523450	-4.731291	-4.731291	-.749146	2.140937	2.873995
70.50	-1.549301	-4.989065	-4.989065	-.746456	2.163751	2.933385
71.00	-1.576111	-5.275838	-5.275838	-.743848	2.187596	2.996156
71.50	-1.603929	-5.596627	-5.596627	-.741321	2.212521	3.062579
72.00	-1.632811	-5.957811	-5.957811	-.738874	2.238580	3.132953
72.50	-1.662815	-6.367471	-6.367471	-.736505	2.265828	3.207612
73.00	-1.694002	-6.835998	-6.835998	-.734215	2.294328	3.286930
73.50	-1.726440	-7.376981	-7.376981	-.732002	2.324146	3.371326
74.00	-1.760201	-8.008537	-8.008537	-.729864	2.355352	3.461272
74.50	-1.795363	-8.755372	-8.755372	-.727801	2.388023	3.557300
75.00	-1.832011	-9.642974	-9.642974	-.725812	2.422243	3.660013
75.50	-1.870236	-10.748603	-10.748603	-.723896	2.458102	3.771100
76.00	-1.910136	-12.119902	-12.119902	-.722053	2.495698	3.888344
76.50	-1.951818	-13.683736	-13.683736	-.720281	2.535137	4.015647
77.00	-1.995400	-16.236381	-16.236381	-.718579	2.576534	4.153051
77.50	-2.041007	-19.531133	-19.531133	-.716948	2.620016	4.301763
78.00	-2.088779	-24.474587	-24.474587	-.715386	2.665719	4.463190
78.50	-2.138867	-32.715464	-32.715464	-.713893	2.713796	4.638987
79.00	-2.191436	-44.199925	-44.199925	-.712467	2.764410	4.831108
79.50						
80.00						
80.50						
81.00	-2.430455	49.734516	49.734516	-.707434	2.996156	5.817122
81.50	-2.478562	33.250158	33.250158	-.706340	3.062579	6.137173
82.00	-2.519569	25.009426	25.009426	-.705311	3.132953	6.447662
82.50	-2.600410	20.066159	20.066159	-.704347	3.207912	6.906671
83.00	-2.727059	16.771635	16.771635	-.703447	3.286930	7.374590

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θ	R_2	R_3	R_4	R_5	R_6	R_7
83.50	-2.813536	14.419261	14.419261	-.702610	3.371326	7.915008
84.00	-2.904913	12.655739	12.655739	-.701836	3.461272	8.546041
84.50	-3.002322	11.284793	11.284793	-.701126	3.557300	9.292396
85.00	-3.106369	10.188660	10.188660	-.700478	3.660013	10.188660
85.50	-3.217740	9.292396	9.292396	-.699893	3.770100	11.284793
86.00	-3.337221	8.546041	8.546041	-.699370	3.888344	12.655739
86.50	-3.465715	7.915008	7.915008	-.698909	4.015647	14.419261
87.00	-3.604262	7.374590	7.374590	-.698510	4.153051	16.771635
87.50	-3.754071	6.906671	6.906671	-.698173	4.301763	20.066159
88.00	-3.916549	6.497662	6.497662	-.697897	4.463190	25.009426
88.50	-4.093350	6.137173	6.137173	-.697682	4.638987	33.250158
89.00	-4.286431	5.817122	5.817122	-.697529	4.831108	49.734516
89.50	-4.496117	5.531130	5.531130	-.697437	5.041879	99.193311
90.00						
90.50	-4.989065	5.041879	5.041879	-.697437	5.531130	-98.658783
91.00	-5.275838	4.831108	4.831108	-.697529	5.817122	-49.199925
91.50	-5.596627	4.638987	4.638987	-.697682	6.137173	-32.715464
92.00	-5.957811	4.463190	4.463190	-.697897	6.497662	-24.474587
92.50	-6.357471	4.301763	4.301763	-.698173	6.906671	-19.531133
93.00	-6.835998	4.153051	4.153051	-.698510	7.374590	-16.236381
93.50	-7.376981	4.015647	4.015647	-.698909	7.915008	-13.883736
94.00	-8.008537	3.888344	3.888344	-.699370	8.546041	-12.119902
94.50	-8.755372	3.770100	3.770100	-.699893	9.292396	-10.748603
95.00	-9.652074	3.660013	3.660013	-.700478	10.188660	-9.652074
95.50	-10.748603	3.557300	3.557300	-.701126	11.284793	-8.755372
96.00	-12.119902	3.461272	3.461272	-.701836	12.655739	-8.008537
96.50	-13.883736	3.371326	3.371326	-.702610	14.419261	-7.376981
97.00	-16.236381	3.286930	3.286930	-.703447	16.771635	-6.835998
97.50	-19.531133	3.207612	3.207612	-.704347	20.066159	-6.367471
98.00	-24.474587	3.132953	3.132953	-.705311	25.009426	-5.957811
98.50	-32.715464	3.062579	3.062579	-.706340	33.250158	-5.594627
99.00	-49.734516	2.996156	2.996156	-.707434	49.734516	-5.275838
99.50	-98.658783	2.933385	2.933385	-.708593	99.193311	-4.989065
100.00						
100.50						
101.00	49.734516	2.764410	2.764410	-.712467	-49.199925	-4.286431
101.50	33.250158	2.713796	2.713796	-.713893	-32.715464	-4.093350
102.00	25.009426	2.665719	2.665719	-.715386	-24.474587	-3.916549
102.50	20.066159	2.620016	2.620016	-.716948	-19.531133	-3.754071
103.00	16.771635	2.576534	2.576534	-.718579	-16.236381	-3.604262
103.50	14.419261	2.535137	2.535137	-.720281	-13.883736	-3.465715
104.00	12.655739	2.495698	2.495698	-.722053	-12.119902	-3.337221
104.50	11.284793	2.458102	2.458102	-.723896	-10.748603	-3.217740
105.00	10.188660	2.422243	2.422243	-.725812	-9.652074	-3.106369
105.50	9.292396	2.388023	2.388023	-.727801	-8.755372	-3.002322
106.00	8.546041	2.355352	2.355352	-.729864	-8.008537	-2.904913
106.50	7.915008	2.324146	2.324146	-.732002	-7.376981	-2.813536
107.00	7.374590	2.294328	2.294328	-.734215	-6.835998	-2.727659
107.50	6.906671	2.265929	2.265929	-.736505	-6.367471	-2.646810
108.00	6.497662	2.239580	2.239580	-.738874	-5.957811	-2.570569
108.50	6.137173	2.215221	2.215221	-.741321	-5.594627	-2.498562
109.00	5.817122	2.187596	2.187596	-.743848	-5.275838	-2.430455
109.50	5.531130	2.163751	2.163751	-.746456	-4.989065	-2.365946
110.00	5.275838	2.140937	2.140937	-.749146	-4.731201	-2.304765
110.50	5.041879	2.119129	2.119129	-.751920	-4.496117	-2.246669
111.00	4.831108	2.098223	2.098223	-.754779	-4.286431	-2.191435

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<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
111.50	4.638987	2.078239	2.078239	-.757725	-4.093350	-2.138867
112.00	4.463190	2.059121	2.059121	-.760758	-3.916549	-2.088779
112.50	4.301763	2.040834	2.040834	-.763879	-3.754071	-2.041007
113.00	4.153351	2.023344	2.023344	-.767092	-3.604262	-1.995400
113.50	4.019647	2.006622	2.006622	-.770396	-3.465715	-1.951818
114.00	3.898344	1.990639	1.990639	-.773795	-3.337221	-1.910136
114.50	3.770100	1.975369	1.975369	-.777288	-3.217740	-1.870236
115.00	3.660013	1.960786	1.960786	-.780879	-3.106369	-1.832011
115.50	3.557300	1.946867	1.946867	-.784569	-3.002322	-1.795363
116.00	3.461272	1.933590	1.933590	-.788359	-2.904913	-1.760201
116.50	3.371326	1.920934	1.920934	-.792253	-2.813536	-1.726440
117.00	3.285730	1.908881	1.908881	-.796251	-2.727659	-1.694002
117.50	3.207612	1.897412	1.897412	-.800356	-2.646810	-1.662815
118.00	3.132753	1.886511	1.886511	-.804569	-2.570569	-1.632811
118.50	3.062579	1.876161	1.876161	-.808895	-2.498562	-1.603929
119.00	2.996156	1.866348	1.866348	-.813333	-2.430455	-1.576111
119.50	2.933345	1.857058	1.857058	-.817888	-2.365946	-1.549301
120.00	2.873995	1.848278	1.848278	-.822561	-2.304765	-1.523450
120.50	2.817743	1.839996	1.839996	-.827355	-2.246669	-1.498511
121.00	2.764410	1.832201	1.832201	-.832273	-2.191436	-1.474439
121.50	2.713796	1.824882	1.824882	-.837318	-2.138867	-1.451193
122.00	2.665719	1.818030	1.818030	-.842492	-2.088779	-1.428734
122.50	2.620016	1.811636	1.811636	-.847798	-2.041007	-1.407025
123.00	2.576534	1.805691	1.805691	-.853240	-1.995400	-1.386034
123.50	2.535137	1.800188	1.800188	-.858821	-1.951818	-1.365727
124.00	2.495098	1.795119	1.795119	-.864544	-1.910136	-1.346075
124.50	2.456102	1.790479	1.790479	-.870413	-1.870236	-1.327049
125.00	2.422243	1.786261	1.786261	-.876431	-1.832011	-1.308622
125.50	2.388923	1.782461	1.782461	-.882603	-1.795363	-1.290769
126.00	2.355352	1.779073	1.779073	-.888931	-1.760201	-1.273466
126.50	2.322146	1.776093	1.776093	-.895421	-1.726440	-1.256691
127.00	2.289328	1.773518	1.773518	-.902076	-1.694002	-1.240422
127.50	2.256928	1.771344	1.771344	-.908901	-1.662815	-1.224639
128.00	2.225080	1.769569	1.769569	-.915900	-1.632811	-1.209323
128.50	2.193721	1.768191	1.768191	-.923074	-1.603929	-1.194456
129.00	2.162874	1.767208	1.767208	-.930441	-1.576111	-1.180021
129.50	2.132531	1.766618	1.766618	-.937993	-1.549301	-1.166002
130.00	2.102693	1.766422	1.766422	-.945740	-1.523450	-1.152372
130.50	2.119109	1.766618	1.766618	-.953687	-1.498511	-1.139148
131.00	2.095223	1.767208	1.767208	-.961840	-1.474439	-1.126286
131.50	2.072239	1.768191	1.768191	-.970206	-1.451193	-1.113771
132.00	2.050121	1.769569	1.769569	-.978791	-1.428734	-1.101622
132.50	2.028934	1.771344	1.771344	-.987681	-1.407025	-1.089796
133.00	2.008644	1.773518	1.773518	-.996847	-1.386034	-1.078243
133.50	1.989222	1.776093	1.776093	-1.006225	-1.365727	-1.067100
134.00	1.970639	1.779073	1.779073	-1.015856	-1.346075	-1.056208
134.50	1.952869	1.782461	1.782461	-1.025239	-1.327049	-1.045407
135.00	1.935946	1.786261	1.786261	-1.035297	-1.308622	-1.035297
135.50	1.919967	1.790479	1.790479	-1.045967	-1.290769	-1.025239
136.00	1.904940	1.795119	1.795119	-1.057274	-1.273466	-1.015456
136.50	1.890834	1.800188	1.800188	-1.069100	-1.256691	-1.005925
137.00	1.877681	1.805691	1.805691	-1.081493	-1.240422	-.996643
137.50	1.865412	1.811636	1.811636	-1.094496	-1.224639	-.987601
138.00	1.854011	1.818030	1.818030	-1.108162	-1.209323	-.978791
138.50	1.843481	1.824882	1.824882	-1.111781	-1.194456	-.970206
139.00	1.833846	1.832201	1.832201	-1.124246	-1.180021	-.961840

θ	R_2	R_3	R_4	R_5	R_6	R_7
139.50	1.857058	1.839996	1.839996	-1.139148	-1.156002	-.953687
140.00	1.848278	1.848278	1.848278	-1.152382	-1.152382	-.945740
140.50	1.839996	1.857058	1.857058	-1.166002	-1.139148	-.937993
141.00	1.832201	1.866348	1.866348	-1.180021	-1.120286	-.930441
141.50	1.824382	1.876161	1.876161	-1.194456	-1.1113781	-.923078
142.00	1.818030	1.886511	1.886511	-1.209323	-1.101622	-.915900
142.50	1.811636	1.897412	1.897412	-1.224639	-1.089796	-.908901
143.00	1.805691	1.908881	1.908881	-1.240422	-1.078293	-.902076
143.50	1.800188	1.920934	1.920934	-1.256691	-1.067100	-.895421
144.00	1.795119	1.933590	1.933590	-1.273466	-1.056208	-.888931
144.50	1.790479	1.946867	1.946867	-1.290769	-1.045607	-.882603
145.00	1.786261	1.960786	1.960786	-1.308622	-1.035287	-.876431
145.50	1.782461	1.975369	1.975369	-1.327049	-1.025239	-.870413
146.00	1.779073	1.990639	1.990639	-1.346075	-1.015454	-.864544
146.50	1.776093	2.006622	2.006622	-1.365727	-1.005925	-.858821
147.00	1.773518	2.023344	2.023344	-1.386034	-.996643	-.853240
147.50	1.771344	2.040834	2.040834	-1.407025	-.987601	-.847798
148.00	1.769569	2.059121	2.059121	-1.428734	-.978791	-.842492
148.50	1.768191	2.078239	2.078239	-1.451193	-.970206	-.837318
149.00	1.767208	2.098223	2.098223	-1.474439	-.961840	-.832273
149.50	1.766618	2.119109	2.119109	-1.498511	-.953687	-.827355
150.00	1.766422	2.140937	2.140937	-1.523450	-.945740	-.822551
150.50	1.766614	2.163751	2.163751	-1.549301	-.937993	-.817888
151.00	1.767208	2.187596	2.187596	-1.576111	-.930441	-.813333
151.50	1.768191	2.212521	2.212521	-1.603929	-.923078	-.808895
152.00	1.769569	2.238580	2.238580	-1.632811	-.915900	-.804569
152.50	1.771344	2.265828	2.265828	-1.662815	-.908901	-.800356
153.00	1.773518	2.294328	2.294328	-1.694002	-.902076	-.796251
153.50	1.776093	2.324146	2.324146	-1.726440	-.895421	-.792253
154.00	1.779073	2.355352	2.355352	-1.760201	-.888931	-.788359
154.50	1.782461	2.388023	2.388023	-1.795363	-.882603	-.784569
155.00	1.786261	2.422243	2.422243	-1.832011	-.876431	-.780879
155.50	1.790479	2.458102	2.458102	-1.870236	-.870413	-.777288
156.00	1.795119	2.495698	2.495698	-1.910136	-.864544	-.773795
156.50	1.800188	2.535137	2.535137	-1.951810	-.858821	-.770396
157.00	1.805691	2.576534	2.576534	-1.995400	-.853240	-.767092
157.50	1.811636	2.620016	2.620016	-2.041007	-.847798	-.763879
158.00	1.818030	2.665719	2.665719	-2.088779	-.842492	-.760758
158.50	1.824382	2.713796	2.713796	-2.138867	-.837318	-.757725
159.00	1.832201	2.764410	2.764410	-2.191436	-.832273	-.754779
159.50	1.839996	2.817743	2.817743	-2.246649	-.827355	-.751920
160.00	1.848278	2.873995	2.873995	-2.304765	-.822561	-.749144
160.50	1.857058	2.933385	2.933385	-2.365946	-.817888	-.746456
161.00	1.866348	2.995156	2.995156	-2.430455	-.813333	-.743848
161.50	1.876161	3.062579	3.062579	-2.498562	-.808895	-.741321
162.00	1.886511	3.132953	3.132953	-2.570559	-.804569	-.738874
162.50	1.897412	3.207612	3.207612	-2.646810	-.800356	-.736505
163.00	1.908881	3.286930	3.286930	-2.727459	-.796251	-.734215
163.50	1.920934	3.371326	3.371326	-2.813536	-.792253	-.732002
164.00	1.933590	3.461272	3.461272	-2.904913	-.788359	-.729864
164.50	1.946867	3.557300	3.557300	-3.002322	-.784569	-.727801
165.00	1.960786	3.660013	3.660013	-3.106369	-.780879	-.725812
165.50	1.975369	3.770100	3.770100	-3.217740	-.777288	-.723896
166.00	1.990639	3.888344	3.888344	-3.337221	-.773795	-.722053
166.50	2.006622	4.015647	4.015647	-3.465715	-.770396	-.720281
167.00	2.023344	4.153051	4.153051	-3.604262	-.767092	-.718579

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<u>Q</u>	<u>R_Q</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
167.50	2.040834	4.301763	4.301763	-3.754071	-.763879	-.716948
168.00	2.059121	4.463190	4.463190	-3.916549	-.760758	-.715386
168.50	2.078239	4.638987	4.638987	-4.093350	-.757725	-.713893
169.00	2.098223	4.831108	4.831108	-4.286431	-.754779	-.712467
169.50	2.119109	5.041879	5.041879	-4.498117	-.751920	-.711109
170.00	2.140937	5.274093	5.274093	-4.731201	-.749146	-.709818
170.50	2.163751	5.531130	5.531130	-4.989065	-.746456	-.708593
171.00	2.187596	5.817122	5.817122	-5.275838	-.743848	-.707434
171.50	2.212521	6.137173	6.137173	-5.596627	-.741321	-.706340
172.00	2.239580	6.497662	6.497662	-5.957811	-.738874	-.705311
172.50	2.268628	6.906671	6.906671	-6.367471	-.736505	-.704347
173.00	2.299328	7.374590	7.374590	-6.835998	-.734215	-.703447
173.50	2.324146	7.915008	7.915008	-7.376981	-.732002	-.702610
174.00	2.355352	8.546041	8.546041	-8.008537	-.729864	-.701836
174.50	2.388023	9.292396	9.292396	-8.755372	-.727801	-.701126
175.00	2.422243	10.188660	10.188660	-9.652074	-.725812	-.700478
175.50	2.458102	11.284793	11.284793	-10.748603	-.723896	-.699893
176.00	2.495698	12.655739	12.655739	-12.119902	-.722053	-.699370
176.50	2.535137	14.419261	14.419261	-13.883736	-.720281	-.698909
177.00	2.576534	16.771635	16.771635	-16.236381	-.718579	-.698510
177.50	2.620016	20.066159	20.066159	-19.531133	-.716948	-.698173
178.00	2.665719	25.009426	25.009426	-24.474587	-.715386	-.697897
178.50	2.713796	33.250158	33.250158	-32.715464	-.713893	-.697682
179.00	2.764410	49.734516	49.734516	-49.199925	-.712467	-.697529
179.50	2.817743	99.193311	99.193311	-98.658783	-.711109	-.697437
180.00						

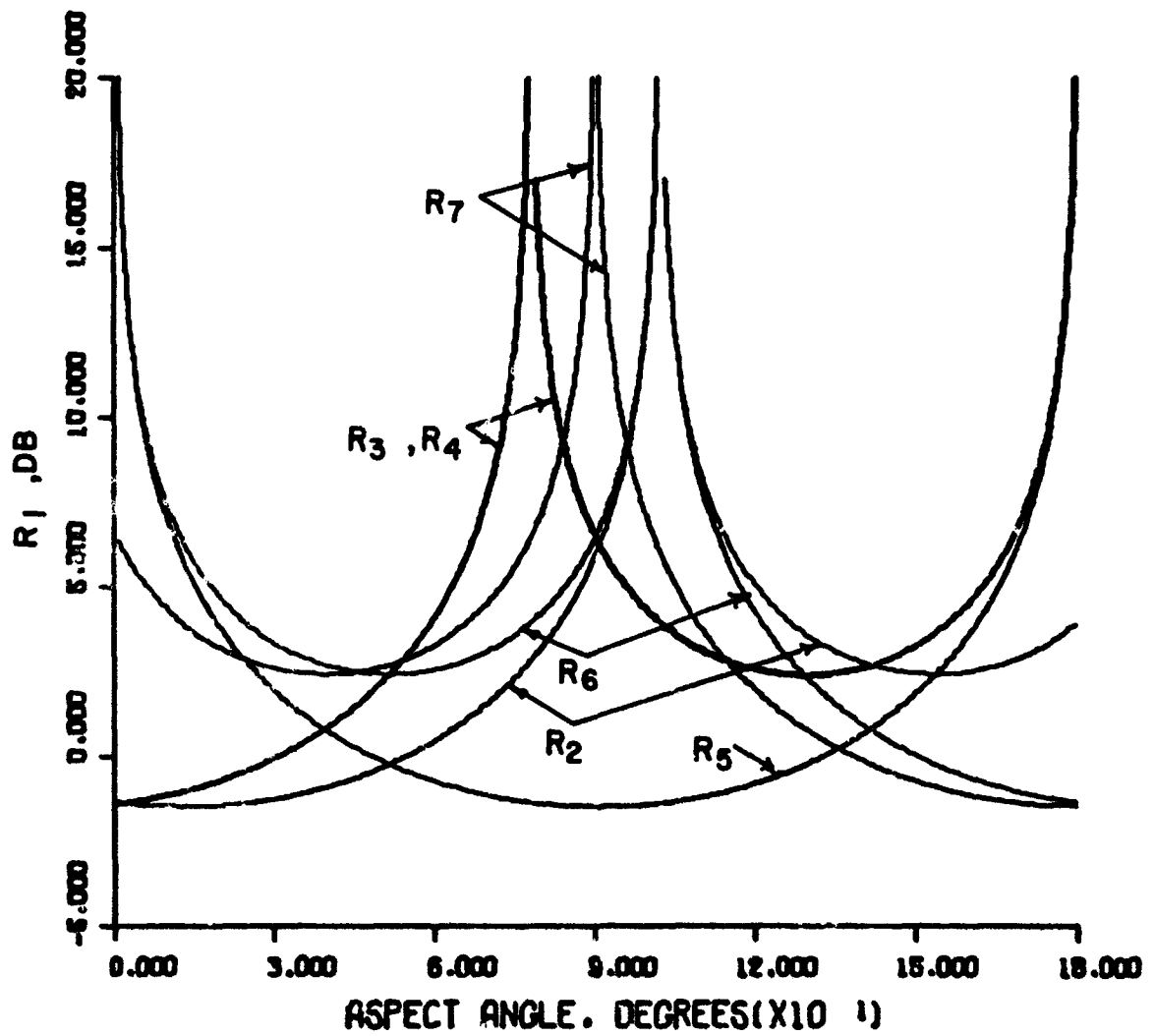


FIGURE A-12. DIFFRACTION COEFFICIENTS
 $(\alpha = 12 \text{ deg}, n = 3/2 + \alpha/\pi,$
 $R_1 = -0.703762)$

TABLE A-13. DIFFRACTION COEFFICIENTS
 $(\alpha = 12 \text{ deg}, n = 3/2 + \alpha/\pi, R_1 = -0.703762)$

θ	R_2	R_3	R_4	R_5	R_6	R_7
0.00						
.50	-.720312	-.723379	-.723379	-98.704341	99.215940	4.288896
1.00	-.718881	-.725017	-.725017	-49.228305	49.739961	4.139995
1.50	-.717518	-.726725	-.726725	-32.738060	33.249813	4.002402
2.00	-.716222	-.728503	-.728503	-24.494250	25.006139	3.874911
2.50	-.714992	-.730354	-.730354	-19.549004	20.061066	3.756479
3.00	-.713829	-.732277	-.732277	-16.253030	16.765305	3.646206
3.50	-.712731	-.734273	-.734273	-13.899491	14.412017	3.543306
4.00	-.711698	-.736344	-.736344	-12.134967	12.647783	3.447090
4.50	-.710730	-.738490	-.738490	-10.763115	11.276261	3.356956
5.00	-.709826	-.740711	-.740711	-9.666129	10.179643	3.272370
5.50	-.708986	-.743010	-.743010	-8.769040	9.282962	3.192862
6.00	-.708209	-.745387	-.745387	-8.021872	8.536240	3.118010
6.50	-.707496	-.747843	-.747843	-7.390023	7.904878	3.047443
7.00	-.706846	-.750380	-.750380	-6.848780	7.364161	2.980825
7.50	-.706258	-.752997	-.752997	-6.380018	6.895965	2.917356
8.00	-.705733	-.755698	-.755698	-5.970146	6.486698	2.858266
8.50	-.705271	-.758482	-.758482	-5.608767	6.125966	2.801813
9.00	-.704870	-.761352	-.761352	-5.287799	5.805684	2.748275
9.50	-.704531	-.764308	-.764308	-5.000858	5.519471	2.697453
10.00	-.704254	-.767351	-.767351	-4.742839	5.262220	2.649167
10.50	-.704039	-.770484	-.770484	-4.509608	5.029798	2.603249
11.00	-.703885	-.773708	-.773708	-4.297784	4.818825	2.559551
11.50	-.703793	-.777025	-.777025	-4.104572	4.626501	2.517935
12.00	-.703762	-.780435	-.780435	-3.927646	4.450515	2.478273
12.50	-.703793	-.783941	-.783941	-3.765050	4.288896	2.440451
13.00	-.703885	-.787545	-.787545	-3.615129	4.139995	2.404361
13.50	-.704039	-.791248	-.791248	-3.476474	4.002402	2.369907
14.00	-.704254	-.795051	-.795051	-3.347876	3.874911	2.336997
14.50	-.704531	-.798958	-.798958	-3.228295	3.756479	2.305549
15.00	-.704870	-.802970	-.802970	-3.116827	3.646206	2.275485
15.50	-.705271	-.807089	-.807089	-3.012688	3.543306	2.246733
16.00	-.705733	-.811318	-.811318	-2.915149	3.447090	2.219229
16.50	-.706258	-.815657	-.815657	-2.823725	3.356956	2.192910
17.00	-.706846	-.820111	-.820111	-2.737764	3.272370	2.167719
17.50	-.707496	-.824681	-.824681	-2.656833	3.192862	2.143603
18.00	-.708209	-.829370	-.829370	-2.580513	3.118010	2.120513
18.50	-.708986	-.834180	-.834180	-2.509430	3.047443	2.098402
19.00	-.709826	-.839115	-.839115	-2.442247	2.980825	2.077229
19.50	-.710730	-.844176	-.844176	-2.375665	2.917356	2.056952
20.00	-.711698	-.849367	-.849367	-2.314413	2.858266	2.037535
20.50	-.712731	-.854691	-.854691	-2.256244	2.801813	2.018942
21.00	-.713829	-.860151	-.860151	-2.200948	2.748275	2.001140
21.50	-.714992	-.865750	-.865750	-2.148313	2.697453	1.984099
22.00	-.716222	-.871491	-.871491	-2.098161	2.649167	1.967791
22.50	-.717518	-.877379	-.877379	-2.050321	2.603249	1.952188
23.00	-.718881	-.883416	-.883416	-2.004657	2.559551	1.937260
23.50	-.720312	-.889607	-.889607	-1.961015	2.517935	1.922998
24.00	-.721811	-.895955	-.895955	-1.919274	2.478273	1.909365
24.50	-.723379	-.902465	-.902465	-1.879316	2.440451	1.896346
25.00	-.725017	-.909141	-.909141	-1.841035	2.404361	1.883921
25.50	-.726725	-.915986	-.915986	-1.804332	2.369907	1.872011
26.00	-.728503	-.923007	-.923007	-1.769116	2.336997	1.860700
26.50	-.730354	-.930207	-.930207	-1.735301	2.305549	1.850031
27.00	-.732277	-.937591	-.937591	-1.702411	2.275485	1.839810

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<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
27.50	-.734273	-.945166	-.945166	-1.671573	2.246733	1.830102
28.00	-.736344	-.952935	-.952935	-1.641520	2.219229	1.820893
28.50	-.738490	-.960906	-.960906	-1.612589	2.192910	1.812172
29.00	-.740711	-.969083	-.969083	-1.584722	2.167719	1.803927
29.50	-.743010	-.977473	-.977473	-1.557866	2.143603	1.796147
30.00	-.745387	-.986082	-.986082	-1.531969	2.120513	1.788823
30.50	-.747843	-.994917	-.994917	-1.506984	2.098402	1.781943
31.00	-.750380	-1.003985	-1.003985	-1.482867	2.077229	1.775501
31.50	-.752997	-1.013293	-1.013293	-1.459577	2.056952	1.769487
32.00	-.755698	-1.022848	-1.022848	-1.437075	2.037535	1.763895
32.50	-.758482	-1.032659	-1.032659	-1.415324	2.018942	1.758717
33.00	-.761352	-1.042734	-1.042734	-1.394291	2.001140	1.753947
33.50	-.764308	-1.053082	-1.053082	-1.373944	1.984099	1.749579
34.00	-.767351	-1.063711	-1.063711	-1.354251	1.967791	1.745608
34.50	-.770484	-1.074632	-1.074632	-1.335185	1.952188	1.742030
35.00	-.773708	-1.085853	-1.085853	-1.316720	1.937264	1.738839
35.50	-.777023	-1.097386	-1.097386	-1.298829	1.922998	1.736032
36.00	-.780435	-1.109242	-1.109242	-1.281489	1.909365	1.733607
36.50	-.783941	-1.121432	-1.121432	-1.264677	1.896346	1.731559
37.00	-.787545	-1.133967	-1.133967	-1.248371	1.883921	1.729887
37.50	-.791248	-1.146861	-1.146861	-1.232553	1.872071	1.728588
38.00	-.795051	-1.160128	-1.160128	-1.217202	1.860780	1.727662
38.50	-.798958	-1.173780	-1.173780	-1.202301	1.850031	1.727106
39.00	-.802970	-1.187833	-1.187833	-1.187833	1.839810	1.726921
39.50	-.807089	-1.202301	-1.202301	-1.173780	1.830102	1.727106
40.00	-.811318	-1.217202	-1.217202	-1.160128	1.820893	1.727662
40.50	-.815657	-1.232553	-1.232553	-1.146861	1.812172	1.728588
41.00	-.820111	-1.248371	-1.248371	-1.133967	1.803927	1.729887
41.50	-.824681	-1.264677	-1.264677	-1.121432	1.796147	1.731559
42.00	-.829370	-1.281489	-1.281489	-1.109242	1.788823	1.733607
42.50	-.834180	-1.298829	-1.298829	-1.097386	1.781943	1.736032
43.00	-.839115	-1.316720	-1.316720	-1.085853	1.775501	1.738839
43.50	-.844176	-1.335185	-1.335185	-1.074632	1.769487	1.742030
44.00	-.849367	-1.354251	-1.354251	-1.063711	1.763895	1.745608
44.50	-.854691	-1.373944	-1.373944	-1.053082	1.758717	1.749579
45.00	-.860151	-1.394291	-1.394291	-1.042734	1.753947	1.753947
45.50	-.865750	-1.415324	-1.415324	-1.032659	1.749579	1.758717
46.00	-.871491	-1.437075	-1.437075	-1.022848	1.745608	1.763895
46.50	-.877379	-1.459577	-1.459577	-1.013293	1.742030	1.769487
47.00	-.883416	-1.482867	-1.482867	-1.003985	1.738839	1.775501
47.50	-.889607	-1.506984	-1.506984	-.994917	1.736032	1.781943
48.00	-.895955	-1.531969	-1.531969	-.986082	1.733607	1.788823
48.50	-.902465	-1.557866	-1.557866	-.977473	1.731559	1.796147
49.00	-.909141	-1.584722	-1.584722	-.969083	1.729887	1.803927
49.50	-.915986	-1.612589	-1.612589	-.960906	1.728588	1.812172
50.00	-.923007	-1.641520	-1.641520	-.952935	1.727662	1.820893
50.50	-.930207	-1.671573	-1.671573	-.945166	1.727106	1.830102
51.00	-.937591	-1.702811	-1.702811	-.937541	1.726921	1.839810
51.50	-.945166	-1.735301	-1.735301	-.930207	1.727106	1.850031
52.00	-.952935	-1.769116	-1.769116	-.923007	1.727662	1.860780
52.50	-.960906	-1.804332	-1.804332	-.915986	1.728588	1.872071
53.00	-.969083	-1.841035	-1.841035	-.909141	1.729887	1.883921
53.50	-.977473	-1.879316	-1.879316	-.902465	1.731559	1.896346
54.00	-.986082	-1.919274	-1.919274	-.895955	1.733607	1.909365
54.50	-.994917	-1.961015	-1.961015	-.889607	1.736032	1.922998
55.00	-1.003985	-2.004657	-2.004657	-.883416	1.738839	1.937264

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<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
55.50	-1.013293	-2.050326	-2.050326	-.877379	1.742030	1.952188
56.00	-1.022848	-2.098161	-2.098161	-.871491	1.745608	1.967791
56.50	-1.032659	-2.148313	-2.148313	-.865750	1.749579	1.984099
57.00	-1.042134	-2.200948	-2.200948	-.860151	1.753947	2.001140
57.50	-1.053082	-2.256248	-2.256248	-.854691	1.758717	2.018942
58.00	-1.063711	-2.314413	-2.314413	-.849367	1.763895	2.037535
58.50	-1.074632	-2.375665	-2.375665	-.844176	1.769487	2.056952
59.00	-1.085853	-2.440247	-2.440247	-.839115	1.775501	2.077229
59.50	-1.097386	-2.508430	-2.508430	-.834180	1.781943	2.098402
60.00	-1.109242	-2.580513	-2.580513	-.829370	1.788823	2.120513
60.50	-1.121432	-2.655833	-2.655833	-.824681	1.796147	2.143603
61.00	-1.133967	-2.737764	-2.737764	-.820111	1.803927	2.167719
61.50	-1.146861	-2.823725	-2.823725	-.815657	1.812172	2.192910
62.00	-1.160128	-2.915189	-2.915189	-.811318	1.820893	2.219229
62.50	-1.173780	-3.012688	-3.012688	-.807089	1.830102	2.246733
63.00	-1.187833	-3.116827	-3.116827	-.802970	1.839810	2.275485
63.50	-1.202301	-3.228295	-3.228295	-.798958	1.850031	2.305549
64.00	-1.217202	-3.347876	-3.347876	-.795051	1.860780	2.336997
64.50	-1.232553	-3.476474	-3.476474	-.791248	1.872071	2.369907
65.00	-1.248371	-3.615129	-3.615129	-.787545	1.883921	2.404361
65.50	-1.264677	-3.765050	-3.765050	-.783941	1.896346	2.440451
66.00	-1.281489	-3.927646	-3.927646	-.780435	1.909365	2.478273
66.50	-1.298829	-4.104572	-4.104572	-.777025	1.922998	2.517935
67.00	-1.316720	-4.297784	-4.297784	-.773708	1.937264	2.559551
67.50	-1.335185	-4.509608	-4.509608	-.770484	1.952188	2.603249
68.00	-1.354251	-4.742839	-4.742839	-.767351	1.967791	2.649167
68.50	-1.373944	-5.000858	-5.000858	-.764308	1.984099	2.697453
69.00	-1.394291	-5.287799	-5.287799	-.761352	2.001140	2.748275
69.50	-1.415324	-5.608767	-5.608767	-.758482	2.018942	2.801813
70.00	-1.437075	-5.970146	-5.970146	-.755698	2.037535	2.858266
70.50	-1.459577	-6.380018	-6.380018	-.752997	2.056952	2.917856
71.00	-1.482867	-6.848780	-6.848780	-.750380	2.077229	2.980825
71.50	-1.506984	-7.390023	-7.390023	-.747843	2.098402	3.047443
72.00	-1.531969	-8.021872	-8.021872	-.745387	2.120513	3.118010
72.50	-1.557866	-8.769040	-8.769040	-.743010	2.143603	3.192862
73.00	-1.584722	-9.666129	-9.666129	-.740711	2.167719	3.272370
73.50	-1.612589	-10.763115	-10.763115	-.738490	2.192910	3.356956
74.00	-1.641520	-12.134967	-12.134967	-.736344	2.219229	3.447090
74.50	-1.671573	-13.899491	-13.899491	-.734273	2.246733	3.543306
75.00	-1.702811	-16.253030	-16.253030	-.732277	2.275485	3.646206
75.50	-1.735301	-19.549004	-19.549004	-.730354	2.305549	3.756479
76.00	-1.769116	-24.494250	-24.494250	-.728503	2.336997	3.874911
76.50	-1.804332	-32.738060	-32.738060	-.726725	2.369907	4.002402
77.00	-1.841035	-49.228305	-49.228305	-.725017	2.404361	4.139995
77.50	-1.879316	-98.704341	-98.704341	-.723379	2.440451	4.288896
78.00						
78.50						
79.00	-2.034657	49.739961	49.739961	-.718881	2.559551	4.818825
79.50	-2.050326	33.249813	33.249813	-.717518	2.603249	5.029798
80.00	-2.069816	25.006139	25.006139	-.716222	2.649167	5.262220
80.50	-2.148313	20.061066	20.061066	-.714992	2.697453	5.519471
81.00	-2.200948	16.745305	16.745305	-.713829	2.748275	5.805684
81.50	-2.256248	14.412017	14.412017	-.712731	2.801813	6.125966
82.00	-2.314413	12.647783	12.647783	-.711698	2.858266	6.488698
82.50	-2.375665	11.276261	11.276261	-.710730	2.917856	6.895965
83.00	-2.440247	10.177643	10.177643	-.709826	2.980825	7.364161

<u>Q</u>	<u>R_Q</u>	<u>R_Q</u>	<u>R_Q</u>	<u>R_Q</u>	<u>R_Q</u>	<u>R_Q</u>
83.50	-2.508430	9.282962	9.282962	-.708986	3.047443	7.904878
84.00	-2.500513	8.536240	8.536240	-.708209	3.118010	8.536240
84.50	-2.656833	7.904878	7.904878	-.707496	3.192862	9.282962
85.00	-2.737764	7.364161	7.364161	-.706846	3.272370	10.179643
85.50	-2.823725	6.895965	6.895965	-.706258	3.356956	11.276261
86.00	-2.915189	6.486698	6.486698	-.705733	3.447090	12.647783
86.50	-3.012088	6.125966	6.125966	-.705271	3.543306	14.412017
87.00	-3.116027	5.805684	5.805684	-.704870	3.646206	16.765305
87.50	-3.228295	5.519471	5.519471	-.704531	3.756479	20.061066
88.00	-3.347076	5.262220	5.262220	-.704254	3.874911	25.006139
88.50	-3.476474	5.029798	5.029798	-.704039	4.002402	33.249813
89.00	-3.615129	4.818825	4.818825	-.703885	4.139995	49.739961
89.50	-3.765950	4.626507	4.626507	-.703793	4.288896	99.215940
90.00						
90.50	-4.104572	4.288896	4.288896	-.703793	4.626507	-98.704341
91.00	-4.277784	4.139995	4.139995	-.703885	4.818825	-49.228305
91.50	-4.504008	4.002402	4.002402	-.704039	5.029798	-32.738060
92.00	-4.742039	3.874911	3.874911	-.704254	5.262220	-24.494250
92.50	-5.000858	3.756479	3.756479	-.704531	5.519471	-19.549004
93.00	-5.287799	3.646206	3.646206	-.704870	5.805684	-16.253030
93.50	-5.608767	3.543306	3.543306	-.705271	6.125966	-13.899491
94.00	-5.970146	3.447090	3.447090	-.705733	6.486698	-12.134967
94.50	-6.390018	3.356956	3.356956	-.706258	6.895965	-10.763115
95.00	-6.844780	3.272370	3.272370	-.706846	7.364161	-9.666129
95.50	-7.390023	3.192862	3.192862	-.707496	7.904878	-8.769040
96.00	-8.021872	3.118010	3.118010	-.708209	8.536240	-8.021872
96.50	-8.769040	3.047443	3.047443	-.708986	9.282962	-7.390023
97.00	-9.666129	2.980825	2.980825	-.709826	10.179643	-6.848780
97.50	-10.763115	2.917856	2.917856	-.710730	11.276261	-6.380018
98.00	-12.134967	2.858266	2.858266	-.711698	12.647783	-5.970146
98.50	-13.899491	2.801813	2.801813	-.712731	14.412017	-5.608767
99.00	-16.253030	2.748275	2.748275	-.713829	16.765305	-5.287799
99.50	-19.549004	2.697453	2.697453	-.714992	20.061066	-5.000858
100.00	-24.494250	2.649167	2.649167	-.716222	25.006139	-4.742839
100.50	-32.738060	2.603249	2.603249	-.717514	33.249813	-4.509608
101.00	-49.739961	2.559551	2.559551	-.718881	49.739961	-4.297784
101.50	-98.704341	2.517935	2.517935	-.720312	99.215940	-4.104572
102.00						
102.50						
103.00	49.739961	2.404361	2.404361	-.725017	-49.228305	-3.615129
103.50	33.249813	2.369907	2.369907	-.726725	-32.738060	-3.476474
104.00	25.006139	2.336997	2.336997	-.728503	-24.494250	-3.347876
104.50	20.061066	2.305549	2.305549	-.730354	-19.549004	-3.228295
105.00	16.765305	2.275405	2.275405	-.732277	-16.253030	-3.116827
105.50	14.412017	2.246733	2.246733	-.734273	-13.899491	-3.012688
106.00	12.647783	2.219229	2.219229	-.736344	-12.134967	-2.915189
106.50	11.276261	2.192910	2.192910	-.738490	-10.763115	-2.823725
107.00	10.179643	2.167719	2.167719	-.740711	-9.666129	-2.737764
107.50	9.282962	2.143503	2.143503	-.743010	-8.769040	-2.654833
108.00	8.536240	2.120513	2.120513	-.745387	-8.021872	-2.580513
108.50	7.904878	2.098402	2.098402	-.747843	-7.390023	-2.508430
109.00	7.364161	2.077229	2.077229	-.750380	-6.848780	-2.440247
109.50	6.895965	2.056952	2.056952	-.752997	-6.380018	-2.375665
110.00	6.486698	2.037535	2.037535	-.755698	-5.970146	-2.314413
110.50	6.125966	2.018942	2.018942	-.758482	-5.608767	-2.256248
111.00	5.805684	2.001140	2.001140	-.761352	-5.287799	-2.206948

<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
111.50	5.519471	1.984099	1.984099	-.764308	-5.000858	-2.148313
112.00	5.262220	1.967791	1.967791	-.767351	-4.742839	-2.098161
112.50	5.029794	1.952188	1.952188	-.770484	-4.509608	-2.050326
113.00	4.818825	1.937264	1.937264	-.773708	-4.291784	-2.004657
113.50	4.620507	1.922998	1.922998	-.777025	-4.104572	-1.961015
114.00	4.450515	1.909365	1.909365	-.780435	-3.927646	-1.919274
114.50	4.288896	1.896346	1.896346	-.783941	-3.765050	-1.879316
115.00	4.133995	1.883921	1.883921	-.787545	-3.615129	-1.841035
115.50	4.002402	1.872071	1.872071	-.791248	-3.476474	-1.804332
116.00	3.874911	1.860780	1.860780	-.795051	-3.347876	-1.769116
116.50	3.756479	1.850031	1.850031	-.798958	-3.228295	-1.735301
117.00	3.646206	1.839810	1.839810	-.802970	-3.116827	-1.702811
117.50	3.543306	1.830102	1.830102	-.807089	-3.012688	-1.671573
118.00	3.447090	1.820893	1.820893	-.811318	-2.915189	-1.641520
118.50	3.356956	1.812172	1.812172	-.815657	-2.823725	-1.612589
119.00	3.272310	1.803927	1.803927	-.820111	-2.737764	-1.584722
119.50	3.192862	1.796147	1.796147	-.824681	-2.656833	-1.557866
120.00	3.118010	1.788823	1.788823	-.829370	-2.580513	-1.531969
120.50	3.047443	1.781943	1.781943	-.834180	-2.508430	-1.506984
121.00	2.980025	1.775501	1.775501	-.839115	-2.440247	-1.482867
121.50	2.917056	1.769487	1.769487	-.844176	-2.375665	-1.459577
122.00	2.858266	1.763895	1.763895	-.849367	-2.314413	-1.437075
122.50	2.801413	1.758717	1.758717	-.854691	-2.256248	-1.415324
123.00	2.748275	1.753947	1.753947	-.860151	-2.200948	-1.394291
123.50	2.697453	1.749579	1.749579	-.865750	-2.148313	-1.373944
124.00	2.649167	1.745608	1.745608	-.871491	-2.098161	-1.354251
124.50	2.603249	1.742030	1.742030	-.877379	-2.050326	-1.335185
125.00	2.559551	1.738839	1.738839	-.883416	-2.004657	-1.316720
125.50	2.517935	1.736032	1.736032	-.889607	-1.961015	-1.298829
126.00	2.478273	1.733607	1.733607	-.895955	-1.919274	-1.281489
126.50	2.440451	1.731559	1.731559	-.902465	-1.879316	-1.264677
127.00	2.404361	1.729887	1.729887	-.909141	-1.841035	-1.248371
127.50	2.369907	1.728588	1.728588	-.915986	-1.804332	-1.232553
128.00	2.336997	1.727662	1.727662	-.923007	-1.769116	-1.217202
128.50	2.305549	1.727106	1.727106	-.930207	-1.735301	-1.202301
129.00	2.275485	1.726921	1.726921	-.937591	-1.702811	-1.187833
129.50	2.246733	1.727106	1.727106	-.945166	-1.671573	-1.173780
130.00	2.219229	1.727662	1.727662	-.952935	-1.641520	-1.160126
130.50	2.192910	1.728588	1.728588	-.960906	-1.612589	-1.146861
131.00	2.167719	1.729887	1.729887	-.969083	-1.584722	-1.133967
131.50	2.143603	1.731559	1.731559	-.977473	-1.557866	-1.121432
132.00	2.120513	1.733607	1.733607	-.986082	-1.531969	-1.109242
132.50	2.098402	1.736032	1.736032	-.994917	-1.506984	-1.097386
133.00	2.077229	1.738839	1.738839	-1.003985	-1.482867	-1.085853
133.50	2.056952	1.742030	1.742030	-1.013293	-1.459577	-1.074632
134.00	2.037535	1.745608	1.745608	-1.022848	-1.437075	-1.063711
134.50	2.018942	1.749579	1.749579	-1.032659	-1.415324	-1.053082
135.00	2.001140	1.753947	1.753947	-1.042734	-1.394291	-1.042734
135.50	1.984099	1.758717	1.758717	-1.053082	-1.373944	-1.032659
136.00	1.967791	1.763895	1.763895	-1.063711	-1.354251	-1.022848
136.50	1.952188	1.769487	1.769487	-1.074632	-1.335185	-1.013293
137.00	1.937264	1.775501	1.775501	-1.085853	-1.316720	-1.003985
137.50	1.922998	1.781943	1.781943	-1.097386	-1.298829	-.994917
138.00	1.909365	1.788823	1.788823	-1.109242	-1.281489	-.986082
138.50	1.896346	1.796147	1.796147	-1.121432	-1.264677	-.977473
139.00	1.883921	1.803927	1.803927	-1.133967	-1.248371	-.969083

θ	R_2	R_3	R_4	R_5	R_6	R_7
139.50	1.872071	1.812172	1.812172	-1.146861	-1.232553	-.960906
140.00	1.860780	1.820493	1.820493	-1.160128	-1.217202	-.952935
140.50	1.850031	1.830102	1.830102	-1.173780	-1.202301	-.945166
141.00	1.839410	1.839810	1.839810	-1.187833	-1.187833	-.937591
141.50	1.830102	1.850031	1.850031	-1.202301	-1.173780	-.930207
142.00	1.820493	1.860780	1.860780	-1.217202	-1.160128	-.923007
142.50	1.812172	1.872071	1.872071	-1.232553	-1.146861	-.915986
143.00	1.803927	1.883921	1.883921	-1.248371	-1.133967	-.909141
143.50	1.796147	1.896346	1.896346	-1.264677	-1.121432	-.902465
144.00	1.788823	1.909365	1.909365	-1.281449	-1.109242	-.895955
144.50	1.781943	1.922998	1.922998	-1.298829	-1.097386	-.889607
145.00	1.775501	1.937264	1.937264	-1.316720	-1.085853	-.883416
145.50	1.769487	1.952188	1.952188	-1.335185	-1.074632	-.877379
146.00	1.763895	1.967791	1.967791	-1.354251	-1.063711	-.871491
146.50	1.758717	1.984099	1.984099	-1.373944	-1.053082	-.865750
147.00	1.753947	2.001140	2.001140	-1.394291	-1.042734	-.860151
147.50	1.749579	2.018942	2.018942	-1.415324	-1.032659	-.854691
148.00	1.745608	2.037535	2.037535	-1.437075	-1.022848	-.849367
148.50	1.742030	2.056952	2.056952	-1.459577	-1.013293	-.844176
149.00	1.738839	2.077229	2.077229	-1.482867	-1.003985	-.839115
149.50	1.736032	2.098402	2.098402	-1.506984	-.994917	-.834180
150.00	1.733697	2.120513	2.120513	-1.531969	-.986082	-.829370
150.50	1.731759	2.143503	2.143503	-1.557866	-.977473	-.824681
151.00	1.729887	2.167719	2.167719	-1.584722	-.969083	-.820111
151.50	1.728588	2.192910	2.192910	-1.612589	-.960906	-.815657
152.00	1.727662	2.219229	2.219229	-1.641520	-.952935	-.811318
152.50	1.727106	2.246733	2.246733	-1.671573	-.945166	-.807089
153.00	1.726921	2.275485	2.275485	-1.702811	-.937591	-.802970
153.50	1.727106	2.305549	2.305549	-1.735301	-.930207	-.798958
154.00	1.727662	2.336997	2.336997	-1.769116	-.923007	-.795051
154.50	1.728588	2.369907	2.369907	-1.804332	-.915986	-.791248
155.00	1.729887	2.404361	2.404361	-1.841035	-.909141	-.787545
155.50	1.731559	2.440451	2.440451	-1.879316	-.902465	-.783941
156.00	1.733697	2.478273	2.478273	-1.919274	-.895955	-.780435
156.50	1.736032	2.517935	2.517935	-1.961015	-.889607	-.777025
157.00	1.738839	2.559551	2.559551	-2.004657	-.883416	-.773708
157.50	1.742030	2.603249	2.603249	-2.050326	-.877379	-.770484
158.00	1.745608	2.649167	2.649167	-2.098161	-.871491	-.767351
158.50	1.749579	2.697453	2.697453	-2.148313	-.865750	-.764308
159.00	1.753947	2.748275	2.748275	-2.200948	-.860151	-.761352
159.50	1.758717	2.801813	2.801813	-2.256248	-.854691	-.758482
160.00	1.763895	2.858266	2.858266	-2.314413	-.849367	-.755698
160.50	1.769487	2.917856	2.917856	-2.375565	-.844176	-.752947
161.00	1.775501	2.980825	2.980825	-2.440247	-.839115	-.750380
161.50	1.781943	3.047443	3.047443	-2.508430	-.834180	-.747843
162.00	1.788823	3.118010	3.118010	-2.580513	-.829370	-.745387
162.50	1.796147	3.192862	3.192862	-2.656833	-.824681	-.743010
163.00	1.803927	3.272370	3.272370	-2.737764	-.820111	-.740711
163.50	1.812172	3.356956	3.356956	-2.823725	-.815657	-.738490
164.00	1.820493	3.447090	3.447090	-2.915144	-.811318	-.736344
164.50	1.830102	3.543306	3.543306	-3.012488	-.807089	-.734273
165.00	1.839810	3.646206	3.646206	-3.116827	-.802970	-.732277
165.50	1.850031	3.756479	3.756479	-3.228295	-.798958	-.730354
166.00	1.860780	3.874911	3.874911	-3.347876	-.795051	-.728503
166.50	1.872071	4.002402	4.002402	-3.476474	-.791248	-.726725
167.00	1.883921	4.139995	4.139995	-3.615124	-.787545	-.725017

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<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
167.50	1.896346	4.288896	4.288896	-3.765050	-.783941	-.723379
168.00	1.909365	4.450515	4.450515	-3.927646	-.780435	-.721811
168.50	1.922998	4.626507	4.626507	-4.104572	-.777025	-.720312
169.00	1.937264	4.818825	4.818825	-4.297784	-.773708	-.718881
169.50	1.952188	5.029798	5.029798	-4.509608	-.770484	-.717518
170.00	1.967791	5.262220	5.262220	-4.742839	-.767351	-.716222
170.50	1.984099	5.519471	5.519471	-5.000858	-.764308	-.714992
171.00	2.001140	5.805684	5.805684	-5.287799	-.761352	-.713829
171.50	2.018942	6.125966	6.125966	-5.608767	-.758482	-.712731
172.00	2.037535	6.486698	6.486698	-5.970146	-.755698	-.711698
172.50	2.056952	6.895965	6.895965	-6.380018	-.752997	-.710730
173.00	2.077229	7.364161	7.364161	-6.848780	-.750380	-.709826
173.50	2.098402	7.904878	7.904878	-7.390023	-.747843	-.708986
174.00	2.120513	8.536240	8.536240	-8.021872	-.745387	-.708209
174.50	2.143603	9.282962	9.282962	-8.769040	-.743010	-.707496
175.00	2.167719	10.179643	10.179643	-9.666129	-.740711	-.706846
175.50	2.192910	11.276261	11.276261	-10.763115	-.738490	-.706258
176.00	2.219229	12.647783	12.647783	-12.134967	-.736344	-.705733
176.50	2.246733	14.412017	14.412017	-13.899491	-.734273	-.705271
177.00	2.275485	16.765305	16.765305	-16.253030	-.732277	-.704870
177.50	2.305549	20.061066	20.061066	-19.549004	-.730354	-.704531
178.00	2.336997	25.006139	25.006139	-24.494250	-.728503	-.704254
178.50	2.369907	33.249813	33.249813	-32.738060	-.726725	-.704039
179.00	2.404361	49.739961	49.739961	-49.228305	-.725017	-.703885
179.50	2.440451	99.215940	99.215940	-98.704341	-.723379	-.703793
180.00						

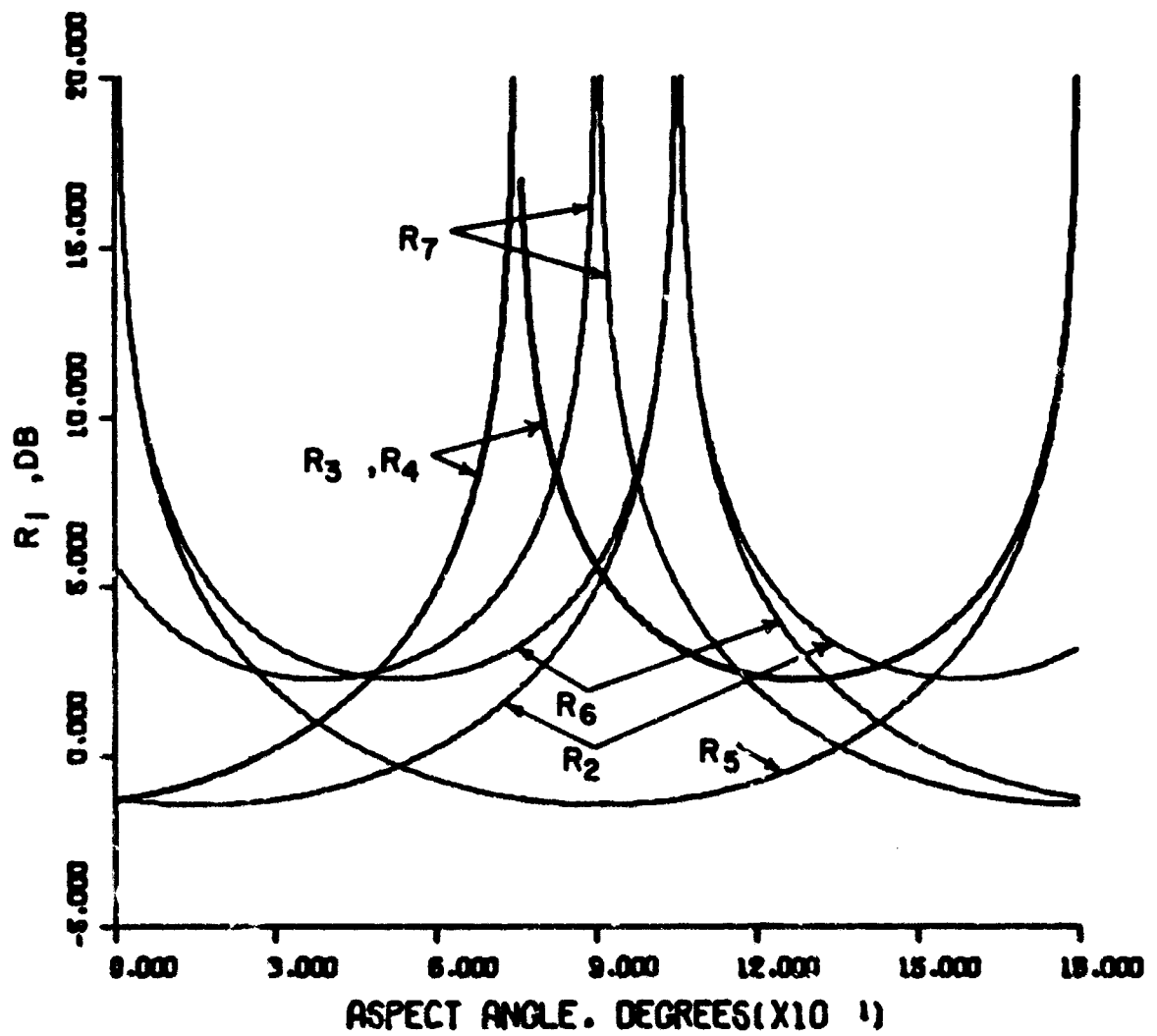


FIGURE A-13. DIFFRACTION COEFFICIENTS
 $(\alpha = 15 \text{ deg, } n = 3/2 + \alpha/\pi,$
 $R_1 = -0.713422)$

TABLE A-14. DIFFRACTION COEFFICIENTS
 $(\alpha = 15 \text{ deg}, n = 3/2 + \alpha/\pi, R_1 = -0.713422)$

θ	R_2	R_3	R_4	R_5	R_6	γ
0.00						
.50	-.740174	-.744116	-.744116	-.98825063	99.304064	3.525412
1.00	-.738312	-.746199	-.746199	-.49.296633	49.775687	3.428882
1.50	-.736523	-.748357	-.748357	-.32.788846	33.267986	3.338437
2.00	-.734805	-.750592	-.750592	-.24.535208	25.015470	3.253542
2.50	-.733157	-.752905	-.752905	-.19.585619	20.065037	3.173726
3.00	-.731580	-.755295	-.755295	-.16.286048	16.765657	3.098567
3.50	-.730072	-.757766	-.757766	-.13.924909	14.409744	3.027693
4.00	-.728633	-.760317	-.760317	-.12.163409	12.643505	2.960768
4.50	-.727261	-.762950	-.762950	-.10.789997	11.270389	2.897492
5.00	-.725957	-.765665	-.765665	-.9.691743	10.172467	2.837594
5.50	-.724720	-.768466	-.768466	-.8.793600	9.274690	2.780831
6.00	-.723550	-.771352	-.771352	-.8.045537	8.527028	2.726983
6.50	-.722445	-.774325	-.774325	-.7.412917	7.894846	2.675848
7.00	-.721406	-.777386	-.777386	-.6.870999	7.353401	2.627246
7.50	-.720432	-.780537	-.780537	-.6.401641	6.884552	2.581011
8.00	-.719522	-.783779	-.783779	-.5.991236	6.474691	2.536992
8.50	-.718677	-.787114	-.787114	-.5.629378	6.113414	2.495052
9.00	-.717898	-.790544	-.790544	-.5.307974	5.792627	2.455063
9.50	-.717178	-.794070	-.794070	-.5.020635	5.505942	2.416910
10.00	-.716524	-.797693	-.797693	-.4.762250	5.248247	2.380485
10.50	-.715933	-.801416	-.801416	-.4.528690	5.015404	2.345692
11.00	-.715405	-.805241	-.805241	-.4.316541	4.804030	2.312439
11.50	-.714939	-.809170	-.809170	-.4.123036	4.611327	2.280643
12.00	-.714536	-.813204	-.813204	-.3.945335	4.434965	2.250226
12.50	-.714195	-.817345	-.817345	-.3.782980	4.272987	2.221117
13.00	-.713917	-.821597	-.821597	-.3.632815	4.123737	2.193249
13.50	-.713700	-.825960	-.825960	-.3.493928	3.985805	2.166561
14.00	-.713545	-.830438	-.830438	-.3.365112	3.857981	2.140995
14.50	-.713453	-.835032	-.835032	-.3.245322	3.734224	2.116498
15.00	-.713422	-.839746	-.839746	-.3.133656	3.628629	2.093021
15.50	-.713453	-.844582	-.844582	-.3.029327	3.525412	2.070517
16.00	-.713545	-.849542	-.849542	-.2.931646	3.428882	2.048943
16.50	-.713700	-.854630	-.854630	-.2.840008	3.338437	2.028258
17.00	-.713917	-.859849	-.859849	-.2.753890	3.253542	2.008425
17.50	-.714195	-.865200	-.865200	-.2.672789	3.173726	1.989409
18.00	-.714536	-.870688	-.870688	-.2.596314	3.098567	1.971177
18.50	-.714939	-.876316	-.876316	-.2.524040	3.027693	1.953697
19.00	-.715405	-.882087	-.882087	-.2.455754	2.960768	1.936941
19.50	-.715933	-.888004	-.888004	-.2.391032	2.897492	1.920881
20.00	-.716524	-.894072	-.894072	-.2.329646	2.837594	1.905493
20.50	-.717178	-.900274	-.900274	-.2.271350	2.780831	1.890751
21.00	-.717898	-.906674	-.906674	-.2.215923	2.726983	1.876634
21.50	-.718677	-.913216	-.913216	-.2.163155	2.675848	1.863120
22.00	-.719522	-.919925	-.919925	-.2.112894	2.627246	1.850189
22.50	-.720432	-.926804	-.926804	-.2.064943	2.581011	1.837824
23.00	-.721406	-.933859	-.933859	-.2.019152	2.536992	1.826005
23.50	-.722445	-.941093	-.941093	-.1.975411	2.495052	1.814718
24.00	-.723550	-.948514	-.948514	-.1.933563	2.455063	1.803946
24.50	-.724720	-.956124	-.956124	-.1.893501	2.416910	1.793675
25.00	-.725957	-.963931	-.963931	-.1.855119	2.380485	1.783890
25.50	-.727261	-.971938	-.971938	-.1.818317	2.345692	1.774580
26.00	-.728633	-.980150	-.980150	-.1.783004	2.312439	1.765733
26.50	-.730072	-.988582	-.988582	-.1.749094	2.280643	1.757336
27.00	-.731580	-.997231	-.997231	-.1.716514	2.250226	1.749380

θ	R_2	R_3	R_4	R_5	R_6	R_7
27.50	-.733157	-1.006106	-1.006106	-1.685187	2.221117	1.741854
28.00	-.734005	-1.015215	-1.015215	-1.655046	2.193249	1.734749
28.50	-.736523	-1.024565	-1.024565	-1.626029	2.166561	1.728057
29.00	-.738512	-1.034163	-1.034163	-1.598079	2.140995	1.721770
29.50	-.740174	-1.044017	-1.044017	-1.571140	2.116498	1.715879
30.00	-.742108	-1.054137	-1.054137	-1.545163	2.093021	1.710379
30.50	-.744116	-1.064529	-1.064529	-1.520100	2.070517	1.705262
31.00	-.746199	-1.075204	-1.075204	-1.495906	2.048943	1.700522
31.50	-.748357	-1.086171	-1.086171	-1.472541	2.028258	1.696155
32.00	-.750592	-1.097440	-1.097440	-1.449965	2.008425	1.692155
32.50	-.752905	-1.109022	-1.109022	-1.428143	1.989409	1.688518
33.00	-.755295	-1.120927	-1.120927	-1.407039	1.971177	1.685239
33.50	-.757766	-1.133167	-1.133167	-1.386622	1.953697	1.682310
34.00	-.760317	-1.145753	-1.145753	-1.366452	1.936941	1.679743
34.50	-.762950	-1.158699	-1.158699	-1.347730	1.920881	1.677520
35.00	-.765666	-1.172019	-1.172019	-1.329199	1.905493	1.675642
35.50	-.768466	-1.185725	-1.185725	-1.311244	1.890751	1.674109
36.00	-.771352	-1.199832	-1.199832	-1.293841	1.876634	1.672918
36.50	-.774325	-1.214357	-1.214357	-1.276967	1.863120	1.672069
37.00	-.777384	-1.229315	-1.229315	-1.260602	1.850189	1.671559
37.50	-.780537	-1.244724	-1.244724	-1.244724	1.837824	1.671340
38.00	-.783779	-1.260602	-1.260602	-1.229315	1.826005	1.671359
38.50	-.787114	-1.276967	-1.276967	-1.214357	1.814718	1.672069
39.00	-.790544	-1.293841	-1.293841	-1.199832	1.803946	1.672518
39.50	-.794070	-1.311244	-1.311244	-1.185725	1.793675	1.674109
40.00	-.797693	-1.329199	-1.329199	-1.172019	1.783890	1.675642
40.50	-.801416	-1.347730	-1.347730	-1.158699	1.774580	1.677520
41.00	-.805241	-1.366862	-1.366862	-1.145753	1.765733	1.679743
41.50	-.809170	-1.386622	-1.386622	-1.133167	1.757336	1.682316
42.00	-.813204	-1.407039	-1.407039	-1.120927	1.749380	1.685239
42.50	-.817345	-1.428143	-1.428143	-1.109022	1.741854	1.688518
43.00	-.821597	-1.449965	-1.449965	-1.097440	1.734749	1.692155
43.50	-.825960	-1.472541	-1.472541	-1.086171	1.728057	1.696155
44.00	-.830438	-1.495906	-1.495906	-1.075204	1.721770	1.700522
44.50	-.835032	-1.520100	-1.520100	-1.064529	1.715879	1.705262
45.00	-.839746	-1.545163	-1.545163	-1.054137	1.710379	1.710379
45.50	-.844582	-1.571140	-1.571140	-1.044017	1.705262	1.715879
46.00	-.849542	-1.598079	-1.598079	-1.034163	1.700522	1.721770
46.50	-.854630	-1.626029	-1.626029	-1.024565	1.696155	1.728057
47.00	-.859849	-1.655046	-1.655046	-1.015215	1.692155	1.734749
47.50	-.865200	-1.685187	-1.685187	-1.006106	1.688518	1.741854
48.00	-.870684	-1.716514	-1.716514	-.997231	1.685239	1.749380
48.50	-.876313	-1.749380	-1.749380	-.988542	1.682316	1.757336
49.00	-.882087	-1.783890	-1.783890	-.980154	1.679743	1.765733
49.50	-.888006	-1.819317	-1.819317	-.971938	1.677520	1.774580
50.00	-.894072	-1.855519	-1.855519	-.963931	1.675642	1.783890
50.50	-.900296	-1.892501	-1.892501	-.956124	1.674109	1.793675
51.00	-.906674	-1.930363	-1.930363	-.948514	1.672918	1.803946
51.50	-.913216	-1.969111	-1.969111	-.941093	1.672069	1.814718
52.00	-.919925	-2.018762	-2.018762	-.933859	1.671554	1.826005
52.50	-.926804	-2.069443	-2.069443	-.926904	1.671340	1.837824
53.00	-.933859	-2.121244	-2.121244	-.919925	1.671359	1.850189
53.50	-.941093	-2.174355	-2.174355	-.913216	1.672069	1.863120
54.00	-.948514	-2.228923	-2.228923	-.906674	1.672918	1.876634
54.50	-.956124	-2.284950	-2.284950	-.900296	1.674109	1.890751
55.00	-.963931	-2.342447	-2.342447	-.894072	1.675642	1.905493

θ	R_2	R_3	R_4	R_5	R_6	R_7
55.50	-.971938	-2.391032	-2.391032	-.888004	1.677520	1.920881
56.00	-.980154	-2.455754	-2.455754	-.882087	1.679743	1.936941
56.50	-.988542	-2.524080	-2.524080	-.876316	1.682316	1.953697
57.00	-.997231	-2.596314	-2.596314	-.870688	1.685230	1.971177
57.50	-1.006106	-2.672789	-2.672789	-.865200	1.688518	1.989409
58.00	-1.015215	-2.753880	-2.753880	-.859849	1.692155	2.008425
58.50	-1.024505	-2.840008	-2.840008	-.854630	1.696155	2.028258
59.00	-1.034163	-2.931646	-2.931646	-.849542	1.700522	2.048943
59.50	-1.044017	-3.029327	-3.029327	-.844582	1.705262	2.070517
60.00	-1.054137	-3.133656	-3.133656	-.839746	1.710379	2.093021
60.50	-1.064529	-3.245322	-3.245322	-.835032	1.715879	2.116498
61.00	-1.075204	-3.365112	-3.365112	-.830438	1.721770	2.140995
61.50	-1.086171	-3.493928	-3.493928	-.825960	1.728057	2.166561
62.00	-1.097440	-3.632815	-3.632815	-.821597	1.734749	2.193249
62.50	-1.109022	-3.782980	-3.782980	-.817345	1.741854	2.221117
63.00	-1.120927	-3.945835	-3.945835	-.813204	1.749380	2.250226
63.50	-1.133167	-4.123036	-4.123036	-.809170	1.757334	2.280643
64.00	-1.145753	-4.316541	-4.316541	-.805241	1.765733	2.312439
64.50	-1.158699	-4.528680	-4.528680	-.801416	1.774580	2.345692
65.00	-1.172019	-4.762250	-4.762250	-.797693	1.783890	2.380485
65.50	-1.185725	-5.020635	-5.020635	-.794070	1.793675	2.416910
66.00	-1.199832	-5.307974	-5.307974	-.790544	1.803946	2.455063
66.50	-1.214357	-5.629378	-5.629378	-.787114	1.814718	2.495052
67.00	-1.229315	-5.991236	-5.991236	-.783779	1.826005	2.536992
67.50	-1.244724	-6.401641	-6.401641	-.780537	1.837824	2.581011
68.00	-1.260602	-6.870999	-6.870999	-.777386	1.850189	2.627246
68.50	-1.276967	-7.412917	-7.412917	-.774325	1.863120	2.675848
69.00	-1.293841	-8.045537	-8.045537	-.771352	1.876634	2.726983
69.50	-1.311244	-8.793600	-8.793600	-.768466	1.890751	2.780831
70.00	-1.329199	-9.691743	-9.691743	-.765666	1.905493	2.837594
70.50	-1.347730	-10.789997	-10.789997	-.762950	1.920881	2.897492
71.00	-1.366862	-12.163409	-12.163409	-.760317	1.936941	2.960768
71.50	-1.386622	-13.929909	-13.929909	-.757766	1.953697	3.027693
72.00	-1.407039	-16.286048	-16.286048	-.755295	1.971177	3.098567
72.50	-1.428143	-19.585619	-19.585619	-.752905	1.989409	3.173726
73.00	-1.449965	-24.536208	-24.536208	-.750592	2.008425	3.253542
73.50	-1.472541	-32.788846	-32.788846	-.748357	2.028258	3.338437
74.00	-1.495906	-49.296633	-49.296633	-.746199	2.048943	3.428882
74.50	-1.520100	-98.825063	-98.825063	-.744116	2.070517	3.525412
75.00						
75.50						
76.00	-1.598079	49.775687	49.775687	-.738312	2.140995	3.857981
76.50	-1.625029	33.267986	33.267986	-.736523	2.166561	3.985805
77.00	-1.655046	25.015470	25.015470	-.734805	2.193249	4.123737
77.50	-1.685187	20.065037	20.065037	-.733157	2.221117	4.272987
78.00	-1.715514	16.765657	16.765657	-.731580	2.250226	4.434965
78.50	-1.749096	14.409744	14.409744	-.730072	2.280643	4.611327
79.00	-1.783004	12.643505	12.643505	-.728633	2.312439	4.804030
79.50	-1.818317	11.270389	11.270389	-.727261	2.345692	5.015400
80.00	-1.855119	10.172467	10.172467	-.725957	2.380485	5.248247
80.50	-1.893501	9.274690	9.274690	-.724720	2.416910	5.505942
81.00	-1.933563	8.527028	8.527028	-.723550	2.455063	5.792627
81.50	-1.975411	7.894846	7.894846	-.722445	2.495052	6.113414
82.00	-2.019162	7.353401	7.353401	-.721406	2.536992	6.474691
82.50	-2.064943	6.884552	6.884552	-.720432	2.581011	6.884552
83.00	-2.112894	6.474691	6.474691	-.719522	2.627246	7.353401

<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
83.50	-2.163165	6.113414	6.113414	-.718677	2.675848	7.894846
84.00	-2.215923	5.792627	5.792627	-.717896	2.726983	8.527028
84.50	-2.271350	5.505942	5.505942	-.717178	2.780831	9.274690
85.00	-2.329646	5.248247	5.248247	-.716524	2.837594	10.172467
85.50	-2.391032	5.015404	5.015404	-.715933	2.897492	11.270389
86.00	-2.455154	4.804030	4.804030	-.715405	2.960768	12.643505
86.50	-2.522088	4.611327	4.611327	-.714939	3.027693	14.409744
87.00	-2.596314	4.434965	4.434965	-.714536	3.098567	16.765657
87.50	-2.672789	4.272987	4.272987	-.714195	3.173726	20.065037
88.00	-2.753880	4.123737	4.123737	-.713917	3.253542	25.015470
88.50	-2.840008	3.985805	3.985805	-.713700	3.338437	33.267986
89.00	-2.931046	3.857981	3.857981	-.713545	3.428882	49.775687
89.50	-3.029327	3.739224	3.739224	-.713453	3.525412	99.304064
90.00						
90.50	-3.245322	3.525412	3.525412	-.713453	3.739224	-98.825063
91.00	-3.365112	3.428882	3.428882	-.713545	3.857921	-49.296633
91.50	-3.493928	3.338437	3.338437	-.713700	3.985805	-32.788846
92.00	-3.632815	3.253542	3.253542	-.713917	4.123737	-24.536208
92.50	-3.782940	3.173726	3.173726	-.714195	4.272987	-19.585619
93.00	-3.945835	3.098567	3.098567	-.714536	4.434965	-16.286048
93.50	-4.123036	3.027693	3.027693	-.714939	4.611327	-13.929909
94.00	-4.315541	2.960768	2.960768	-.715405	4.804030	-12.163409
94.50	-4.522088	2.897492	2.897492	-.715933	5.015404	-10.789997
95.00	-4.762250	2.837594	2.837594	-.716524	5.248247	-9.691743
95.50	-5.020635	2.780831	2.780831	-.717178	5.505942	-8.793600
96.00	-5.301974	2.726983	2.726983	-.717896	5.792627	-8.045537
96.50	-5.627378	2.675848	2.675848	-.718677	6.113414	-7.412917
97.00	-5.991236	2.627246	2.627246	-.719522	6.474691	-6.870999
97.50	-6.401541	2.581011	2.581011	-.720432	6.884552	-6.401641
98.00	-6.870999	2.536992	2.536992	-.721406	7.353401	-5.991236
98.50	-7.412917	2.493052	2.493052	-.722445	7.894846	-5.629378
99.00	-8.045537	2.455063	2.455063	-.723550	8.527028	-5.307974
99.50	-8.793600	2.416910	2.416910	-.724720	9.274690	-5.020635
100.00	-9.691743	2.380485	2.380485	-.725957	10.172467	-4.762250
100.50	-10.789997	2.345692	2.345692	-.727261	11.270389	-4.528680
101.00	-12.163409	2.312439	2.312439	-.728633	12.643505	-4.316541
101.50	-13.929909	2.280643	2.280643	-.730072	14.409744	-4.123036
102.00	-16.286048	2.250226	2.250226	-.731580	16.765657	-3.945835
102.50	-19.585619	2.221117	2.221117	-.733157	20.065037	-3.782980
103.00	-24.536208	2.193249	2.193249	-.734805	25.015470	-3.632815
103.50	-32.788846	2.166561	2.166561	-.736523	33.267986	-3.493928
104.00	-49.775687	2.140995	2.140995	-.738312	49.775687	-3.365112
104.50	-99.304064	2.116498	2.116498	-.740174	99.304064	-3.245322
105.00						
105.50	99.304064	2.070517	2.070517	-.744116	-98.825063	-3.029327
106.00	49.775687	2.040943	2.040943	-.746199	-49.296633	-2.931646
106.50	33.267986	2.028258	2.028258	-.748357	-32.788846	-2.840008
107.00	25.015470	2.008425	2.008425	-.750592	-24.536208	-2.753880
107.50	20.065037	1.989409	1.989409	-.752905	-19.585619	-2.672789
108.00	16.765657	1.971177	1.971177	-.755295	-16.286048	-2.596314
108.50	14.409744	1.953697	1.953697	-.757766	-13.929909	-2.524080
109.00	12.643505	1.936941	1.936941	-.760317	-12.163409	-2.455754
109.50	11.270389	1.920981	1.920981	-.762950	-10.789997	-2.391032
110.00	10.172467	1.905493	1.905493	-.765666	-9.691743	-2.329646
110.50	9.274690	1.890751	1.890751	-.768464	-8.793600	-2.271350
111.00	8.527028	1.876634	1.876634	-.771352	-8.045537	-2.215923

<u>Q</u>	<u>R₂</u>	<u>R₃</u>	<u>R₄</u>	<u>R₅</u>	<u>R₆</u>	<u>R₇</u>
111.50	7.894446	1.863120	1.863120	-.774325	-7.412917	-2.163165
112.00	7.353401	1.850189	1.850189	-.777386	-6.870999	-2.112894
112.50	6.884552	1.837824	1.837824	-.780537	-6.401641	-2.064943
113.00	6.474091	1.826005	1.826005	-.783779	-5.991236	-2.019162
113.50	6.113414	1.814718	1.814718	-.787114	-5.629378	-1.975411
114.00	5.792627	1.803946	1.803946	-.790544	-5.307974	-1.933563
114.50	5.505942	1.793675	1.793675	-.794070	-5.020635	-1.893501
115.00	5.248247	1.783890	1.783890	-.797693	-4.762250	-1.855119
115.50	5.015404	1.774580	1.774580	-.801416	-4.528680	-1.818317
116.00	4.804030	1.765733	1.765733	-.805241	-4.316541	-1.783004
116.50	4.611327	1.757336	1.757336	-.809170	-4.123036	-1.749096
117.00	4.434965	1.749380	1.749380	-.813204	-3.945835	-1.716514
117.50	4.272987	1.741854	1.741854	-.817345	-3.782980	-1.685187
118.00	4.123137	1.734749	1.734749	-.821597	-3.632815	-1.655046
118.50	3.985805	1.728057	1.728057	-.825960	-3.493928	-1.626029
119.00	3.857981	1.721770	1.721770	-.830438	-3.365112	-1.598079
119.50	3.739224	1.715879	1.715879	-.835032	-3.245322	-1.571140
120.00	3.628629	1.710379	1.710379	-.839746	-3.133656	-1.545163
120.50	3.525412	1.705262	1.705262	-.844582	-3.029327	-1.520100
121.00	3.428882	1.700522	1.700522	-.849542	-2.931646	-1.495906
121.50	3.338437	1.696155	1.696155	-.854630	-2.840008	-1.472541
122.00	3.253542	1.692155	1.692155	-.859849	-2.753880	-1.449965
122.50	3.173726	1.688518	1.688518	-.865200	-2.672789	-1.428143
123.00	3.098567	1.685239	1.685239	-.870688	-2.596314	-1.407039
123.50	3.027693	1.682316	1.682316	-.876316	-2.524080	-1.386622
124.00	2.960768	1.679743	1.679743	-.882087	-2.455754	-1.366862
124.50	2.897492	1.677520	1.677520	-.888004	-2.391032	-1.347730
125.00	2.837594	1.675642	1.675642	-.894072	-2.329646	-1.329199
125.50	2.780831	1.674109	1.674109	-.900294	-2.271350	-1.311244
126.00	2.726983	1.672918	1.672918	-.906674	-2.215923	-1.293841
126.50	2.675848	1.672069	1.672069	-.913216	-2.163165	-1.276967
127.00	2.627246	1.671559	1.671559	-.919925	-2.112894	-1.260602
127.50	2.581011	1.671390	1.671390	-.926804	-2.064943	-1.244724
128.00	2.536992	1.671559	1.671559	-.933859	-2.019162	-1.229315
128.50	2.495052	1.672069	1.672069	-.941093	-1.975411	-1.214357
129.00	2.455063	1.672918	1.672918	-.948514	-1.933563	-1.199832
129.50	2.416910	1.674109	1.674109	-.956124	-1.893501	-1.185725
130.00	2.380485	1.675642	1.675642	-.963931	-1.855119	-1.172019
130.50	2.345692	1.677520	1.677520	-.971938	-1.818317	-1.158699
131.00	2.312439	1.679743	1.679743	-.980154	-1.783004	-1.145753
131.50	2.280643	1.682316	1.682316	-.988582	-1.749096	-1.133167
132.00	2.250226	1.685239	1.685239	-.997231	-1.716514	-1.120927
132.50	2.221117	1.688518	1.688518	-1.006106	-1.685187	-1.109022
133.00	2.193249	1.692155	1.692155	-1.015215	-1.655046	-1.097440
133.50	2.166561	1.696155	1.696155	-1.024565	-1.626029	-1.086171
134.00	2.140995	1.700522	1.700522	-1.034163	-1.598079	-1.075204
134.50	2.116598	1.705262	1.705262	-1.044017	-1.571140	-1.064529
135.00	2.093021	1.710379	1.710379	-1.054137	-1.545163	-1.054137
135.50	2.070517	1.715879	1.715879	-1.064529	-1.520100	-1.044017
136.00	2.048943	1.721770	1.721770	-1.075204	-1.495906	-1.034163
136.50	2.028254	1.728057	1.728057	-1.086171	-1.472541	-1.024565
137.00	2.008425	1.734749	1.734749	-1.097440	-1.449965	-1.015215
137.50	1.989439	1.741854	1.741854	-1.109022	-1.428143	-1.006106
138.00	1.971177	1.749380	1.749380	-1.120927	-1.407039	-.997231
138.50	1.953697	1.757336	1.757336	-1.133167	-1.386622	-.988582
139.00	1.936941	1.765733	1.765733	-1.145753	-1.366862	-.980154

θ	R_2	R_3	R_4	R_5	R_6	R_7
139.50	1.920081	1.774580	1.774580	-1.158699	-1.347730	-0.971938
140.00	1.905493	1.783890	1.783890	-1.172019	-1.329199	-0.963931
140.50	1.890751	1.793675	1.793675	-1.185725	-1.311244	-0.956124
141.00	1.876534	1.803946	1.803946	-1.199832	-1.293841	-0.948514
141.50	1.863120	1.814718	1.814718	-1.214357	-1.276967	-0.941093
142.00	1.850189	1.826005	1.826005	-1.229315	-1.260602	-0.933859
142.50	1.837824	1.837824	1.837824	-1.244724	-1.244724	-0.926804
143.00	1.826005	1.850189	1.850189	-1.260602	-1.229315	-0.919925
143.50	1.814718	1.863120	1.863120	-1.276967	-1.214357	-0.913216
144.00	1.803946	1.876634	1.876634	-1.293841	-1.199832	-0.906674
144.50	1.793675	1.890751	1.890751	-1.311244	-1.185725	-0.900294
145.00	1.783890	1.905493	1.905493	-1.329199	-1.172019	-0.894072
145.50	1.774580	1.920081	1.920081	-1.347730	-1.158699	-0.888004
146.00	1.765733	1.936941	1.936941	-1.366862	-1.145753	-0.882087
146.50	1.757336	1.953697	1.953697	-1.386622	-1.133167	-0.876316
147.00	1.749380	1.971177	1.971177	-1.407039	-1.120927	-0.870688
147.50	1.741854	1.989409	1.989409	-1.428143	-1.109022	-0.865200
148.00	1.734749	2.008425	2.008425	-1.449965	-1.097440	-0.859849
148.50	1.728057	2.028258	2.028258	-1.472541	-1.086171	-0.854630
149.00	1.721770	2.048894	2.048894	-1.495906	-1.075204	-0.849542
149.50	1.715879	2.070517	2.070517	-1.520100	-1.064529	-0.844582
150.00	1.710379	2.093021	2.093021	-1.545163	-1.054137	-0.839746
150.50	1.705262	2.116498	2.116498	-1.571140	-1.044017	-0.835032
151.00	1.700522	2.140995	2.140995	-1.598079	-1.034163	-0.830438
151.50	1.696155	2.166561	2.166561	-1.626029	-1.024565	-0.825960
152.00	1.692155	2.193249	2.193249	-1.655046	-1.015215	-0.821597
152.50	1.688518	2.221117	2.221117	-1.685187	-1.006106	-0.817345
153.00	1.685239	2.250226	2.250226	-1.716514	-0.997231	-0.813204
153.50	1.682316	2.280643	2.280643	-1.749096	-0.988582	-0.809170
154.00	1.679743	2.312439	2.312439	-1.783004	-0.980154	-0.805241
154.50	1.677520	2.345692	2.345692	-1.818317	-0.971938	-0.801416
155.00	1.675642	2.380485	2.380485	-1.855119	-0.963931	-0.797693
155.50	1.674109	2.416910	2.416910	-1.893501	-0.956124	-0.794070
156.00	1.672918	2.455063	2.455063	-1.933563	-0.948514	-0.790544
156.50	1.672069	2.495052	2.495052	-1.975411	-0.941093	-0.787114
157.00	1.671559	2.536992	2.536992	-2.019162	-0.933859	-0.783779
157.50	1.671390	2.581011	2.581011	-2.064943	-0.926804	-0.780537
158.00	1.671559	2.627246	2.627246	-2.112694	-0.919925	-0.777386
158.50	1.672069	2.675848	2.675848	-2.163165	-0.913216	-0.774325
159.00	1.672918	2.726983	2.726983	-2.215923	-0.906674	-0.771352
159.50	1.674109	2.780831	2.780831	-2.271350	-0.900294	-0.768466
160.00	1.675642	2.837594	2.837594	-2.329646	-0.894072	-0.765666
160.50	1.677520	2.897492	2.897492	-2.391032	-0.888004	-0.762950
161.00	1.679743	2.960768	2.960768	-2.455754	-0.882087	-0.760317
161.50	1.682316	3.027693	3.027693	-2.524080	-0.876316	-0.757766
162.00	1.685239	3.098567	3.098567	-2.596314	-0.870688	-0.755295
162.50	1.688518	3.173726	3.173726	-2.672789	-0.865200	-0.752905
163.00	1.692155	3.253542	3.253542	-2.753880	-0.859849	-0.750592
163.50	1.696155	3.338437	3.338437	-2.840008	-0.854630	-0.748357
164.00	1.700522	3.428882	3.428882	-2.931646	-0.849542	-0.746199
164.50	1.705262	3.525412	3.525412	-3.029327	-0.844582	-0.744116
165.00	1.710379	3.628629	3.628629	-3.133454	-0.839746	-0.742108
165.50	1.715879	3.739224	3.739224	-3.245022	-0.835032	-0.740174
166.00	1.721770	3.857981	3.857981	-3.365112	-0.830438	-0.738312
166.50	1.728057	3.985805	3.985805	-3.493928	-0.825960	-0.736523
167.00	1.734749	4.123737	4.123737	-3.632915	-0.821597	-0.734805

<u>θ</u>	<u>R_2</u>	<u>R_3</u>	<u>R_4</u>	<u>R_5</u>	<u>R_6</u>	<u>R_7</u>
167.50	1.741854	4.272987	4.272987	-3.782980	-.817345	-.733157
168.00	1.749380	4.434965	4.434965	-3.945835	-.813204	-.731580
168.50	1.757336	4.611327	4.611327	-4.123036	-.809170	-.730072
169.00	1.765733	4.804030	4.804030	-4.316541	-.805241	-.728633
169.50	1.774580	5.015404	5.015404	-4.528680	-.801416	-.727261
170.00	1.783890	5.248247	5.248247	-4.762250	-.797693	-.725957
170.50	1.793675	5.505942	5.505942	-5.020635	-.794070	-.724720
171.00	1.803946	5.792627	5.792627	-5.307974	-.790544	-.723550
171.50	1.814718	6.113414	6.113414	-5.629378	-.787114	-.722445
172.00	1.826005	6.474691	6.474691	-5.991236	-.783779	-.721406
172.50	1.837824	6.884552	6.884552	-6.401641	-.780537	-.720432
173.00	1.850189	7.353401	7.353401	-6.870999	-.777386	-.719522
173.50	1.863120	7.894846	7.894846	-7.412917	-.774325	-.718677
174.00	1.876634	8.527028	8.527028	-8.045537	-.771352	-.717896
174.50	1.890751	9.274690	9.274690	-8.793600	-.768466	-.717178
175.00	1.905493	10.172467	10.172467	-9.691743	-.765666	-.716524
175.50	1.920981	11.270389	11.270389	-10.789997	-.762950	-.715933
176.00	1.936941	12.543505	12.543505	-12.163409	-.760317	-.715405
176.50	1.953997	14.409744	14.409744	-13.929909	-.757766	-.714939
177.00	1.971177	16.765657	16.765657	-16.286048	-.755295	-.714536
177.50	1.989409	20.065037	20.065037	-19.585619	-.752905	-.714195
178.00	2.008425	25.015470	25.015470	-24.536208	-.750592	-.713917
178.50	2.028258	33.267986	33.267986	-32.788846	-.748357	-.713700
179.00	2.048943	49.775687	49.775687	-49.296633	-.746199	-.713545
179.50	2.070517	99.304064	99.304064	-98.825063	-.744116	-.713453
180.00						

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