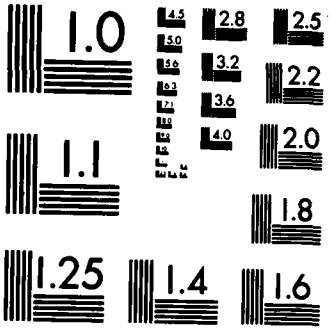
AD-A125 876 TABLES OF SPHERICAL BESSEL FUNCTIONS OF THE FIRST AND SECOND KINDS FOR COMPLEX ARGUMENTS(U) NAVAL RESEARCH LAB WASHINGTON DC J C PIQUETTE 01 MAR 83 NRL-MR-4992 1/1

UNCLASSIFIED F/G 12/1 NL

END

FILMED

DTIC



UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NRL MEMORANDUM REPORT 4992	2. GOVT ACCESSION NO. AD-A125 876	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Tables of Spherical Bessel Functions of the First and Second Kinds for Complex Arguments		5. TYPE OF REPORT & PERIOD COVERED Interim report on a continuing problem 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Jean C. Piquette		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Underwater Sound Reference Detachment Naval Research Laboratory PO Box 8337, Orlando, FL 32856		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS PE: 62711N Task: SF11-121-604 WU: 0593-00
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Sea Systems Command (NSEA 63R12) Washington, DC 20362		12. REPORT DATE March 1, 1983 13. NUMBER OF PAGES 47
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

This work was performed in the Acoustic Metrology Program sponsored by the Naval Sea Systems Command (NSEA 63R12)

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Spherical Bessel functions
Numerical computation methods
Tables

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Tables of values of the spherical Bessel functions of the first and second kinds of complex argument are provided. Although these tables are not extensive, they are useful for checking the validity of computer routines that calculate spherical Bessel functions. A description of the method of computation is provided and verification procedures used are presented.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE
S/N 0102-LF-014-6601

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

CONTENTS

TABLES OF SPHERICAL BESSEL FUNCTIONS OF THE FIRST AND SECOND KINDS FOR COMPLEX ARGUMENT

I. INTRODUCTION

Spherical Bessel functions arise in wave propagation problems of spherical geometry. When loss mechanisms are included, the arguments of these functions are complex. Although researchers requiring these functions generally develop their own computer routines, a need nonetheless exists for tabulated values to verify the accuracy of such routines. Due to the limited availability of tabulated values of spherical Bessel functions of complex argument, at least one group of researchers [1] had to resort to re-expressing these functions in terms of hypergeometric functions in order to proceed with the analysis of their theoretical expressions. The author of this report required values of these functions while working on a similar theoretical problem [2]. To the author's knowledge, only one other table of spherical Bessel functions of complex argument has been published [3]. This previous table is not completely adequate for those wishing to verify a computer routine. This is because to properly verify this type of routine, four extreme cases of argument are required: 1) a large real and a large imaginary part, 2) a large real and a small imaginary part, 3) a small real and a large imaginary part, and 4) a small real and a small imaginary part (all these statements are relative to unity). Case 3 is absent in these previous tables. Also, due to the relatively large number of variable parameters in selecting arguments to include in such a table, there are significant gaps between the arguments that are tabulated there. The present tables give values of spherical Bessel functions of the first two kinds for all integral combinations of real and imaginary arguments ranging from 1 to 10 (in addition to listing several extreme cases). The method described in Ref. 3 for computing the functions was based on a continued fraction scheme. The approach taken here is via use of recurrence relations. Finally, no reliable method of verifying the tabulated values given in Ref. 3 was described. Several different such verification methods are herein presented. At least one of these methods is directly applicable in a straightforward way to any routine that computes spherical Bessel functions. Hence, via use of such a

verification method, researchers may verify routines that compute values out of the range of the available tables.

Section II describes the methods used to compute the functions themselves. Section III presents the method of verifying the accuracy of the tabulated values. Appendix A gives tables of the spherical Bessel functions of the first and second kinds, $j_n(z)$ and $y_n(z)$, respectively, with the real and imaginary parts of the complex variable z each varying from 1 to 10 and with the order varying from 0 to 20. Appendix B presents $j_n(z)$ and $y_n(z)$ for some more extreme values of order and argument.

These tables are not intended to be extensive since their primary purpose is to help establish validity of computer routines. Nonetheless, the tables are sufficiently comprehensive so that at least approximate interpolation is possible for real and/or imaginary arguments in the range 1 to 10 and for orders between 0 and 20.

II. METHODS OF COMPUTING THE FUNCTIONS

The recurrence relations for spherical Bessel functions [4] formed the basis for their computation

$$f_{n-1}(z) + f_{n+1}(z) = (2n+1)z^{-1}f_n(z) \qquad (1)$$

where $f_n(z)$ = either $j_n(z)$ or $y_n(z)$, the spherical Bessel functions of the first and second kinds, respectively. However, this kind of calculation contains several potential sources of difficulty and has to be handled separately for the cases of the functions of the first and second kinds*.

In the case of the cylindrical Bessel functions of the first kind of real argument, it has been shown that the recurrence relation must actually be iterated backward [5]. The reason for this is the fact that as the order n of

*There are many subtleties involved in using recurrence relations to analyze functions. For a more rigorous analysis than the one given here, the reader should consult a standard reference on numerical computation, such as the one by Luke [4a].

$J_n(x)$ increases for fixed argument x, the functional value approaches zero extremely rapidly. This can readily be seen from the expression [6]

$$J_\nu(x) \to \frac{1}{\sqrt{2\pi\nu}} \left(\frac{ex}{2\nu}\right)^\nu \tag{2}$$

(for $\nu \to \infty$ through real positive values).

Since these functions $J_\nu(x)$ decrease with increasing order ν, the repeated use of the appropriate recurrence relation with increasing values of the order leads to increasingly less accurate values of the functions due to subtraction errors. This difficulty is usually circumvented by requiring $J_m(x) = \alpha$, (where $m \gg |x|$ and α is a small number relative to 1) and by working Eq. (1) backward to $J_o(z)$. In this case the subtraction error effect is reversed and the accuracy of each function is <u>improved</u> with each decrease in order (until the limit of the number of digits available on the digital computer being used is reached). When this process is completed, all the values of $J_n(z)$ are off by a common factor, providing m is chosen sufficiently larger than the highest desired order. This common factor can be computed for the case of cylindrical Bessel functions via use of an addition theorem [7], and then the computed functions can be properly normalized.

This procedure can also be applied, with minor modifications, to the computation of the spherical Bessel functions of the first and second kinds of complex arguments, $j_n(z)$ and $y_n(z)$. The procedure is not restricted to real arguments (or even to Bessel functions, for that matter). The only essential requirement is that the functional values decrease systematically with decreasing or with increasing order. If the functions decrease with increasing order, the recurrence relation must be iterated backward, and vice versa.

Consider first the case of $j_n(z)$. It is related to the cylindrical Bessel function $J_\nu(z)$ via the relation [8]

$$j_n(z) = \sqrt{\frac{\pi}{2z}}\ J_{n+1/2}(z). \tag{3}$$

Equations (2) and (3) may readily be combined to give

$$j_n(z) \to \frac{1}{2} \frac{1}{\sqrt{(n+1/2)z}} \left(\frac{ez}{2n+1}\right)^{n+1/2} \qquad (4)$$

(for $n \to \infty$ through real positive values).

It is clear from Eq. (4) that $j_n(z)$ approaches zero when the quantity $[ez/(2n+1)]$ becomes less than 1. This certainly will occur when

$$n > \frac{ez-1}{2} . \qquad (5)$$

When $|z|$ is large (greater than about 50 or so), Eq. (5) may be used to establish a criterion for the minimum value of n required to start the reverse iteration of Eq. (1). Such a criterion must also, of course, take into account the number of decimal digits used to represent the real imaginary parts of complex numbers in the available digital computer. For example, if the computer reliably represents seven decimal digits, m must be chosen such that the magnitude of $j_m(z)$ is at least eight orders of magnitude smaller than the magnitude of $j_n(z)$ for the highest desired order n. This ensures that the "reverse subtraction error" effect described above will result in seven reliable significant digits (with the last digit rounded). For arguments $|z|<50$ it is safer to simply start the recurrence relation from a fixed large value of n. In the program used to generate the tables in this report this large fixed value of n was chosen to be 250 (which is well beyond the eight orders of magnitude criterion mentioned above).

Although the above analysis demonstrates the fact that $j_n(z)$ approaches zero for fixed z as $n \to \infty$, it does not follow that this occurs in a uniform fashion. In fact, aside from the normal trigonometric oscillation associated with spherical Bessel functions, it is possible that the values of $j_n(z)$ increase with increasing z [and vice versa with $y_n(z)$], up to some finite value of n prior to exhibiting their asymptotic behavior. A digit of accuracy is lost for each order of magnitude of change in $j_n(z)$ or $y_n(z)$ which is contrary to their asymptotic behavior with respect to order. Hence, it is necessary to perform the iterations of the recurrence relations in double precision arithmetic to assure single precision accuracy of the final results. (It is still possible to lose single precision accuracy if this contrary behavior continues for more than seven orders of magnitude; hence, a test procedure is required. This is discussed further in Section III.)

Another problem can arise if the initializing value α is chosen too large or if the iteration process must be carried through too many orders. In such cases, since the functions $j_n(z)$ will grow with decreasing n, it is possible for the un-normalized functions to exceed the largest numerical value that can be represented in the digital computer being used for the computation. This difficulty can be circumvented by not using the relation (1) directly, but rather a modified form of it. This modification is based on the fact that the ratio of two successive spherical Bessel functions approaches zero at a much lower rate than the functions themselves. This may be seen by using Eq. (4) to analyze the ratio of two successive spherical Bessel functions $r_n(z)$:

$$r_n(z) = \frac{j_{n+1}(z)}{j_n(z)} \approx \sqrt{\frac{n+(1/2)}{n+(3/2)}} \left(\frac{ez}{2n+3}\right)\left(\frac{2n+1}{ez}\right)^{n+(1/2)} . \qquad (6)$$

By use of the theorem [7a] $\lim_{n\to\infty} (1 + \frac{z}{n})^n = e^z$, it is straightforward to show that $r_n \to z/2n$, as $n\to\infty$. Hence, r_n approaches zero at the rate 1/n, while it can be shown (via the same limit theorem) that j_n approaches zero at the rate $1/[n(2n)^n]$.

Hence, the problem of exceeding the limit of the greatest number representable on the available digital computer can be virtually eliminated by using the recurrence relation for $r_n(z)$:

$$\frac{1}{r_{n-1}} + r_n = (2n+1)/z. \qquad (7)$$

Equation (7) is obtained from Eq. (1) by dividing by $f_n(z)$ and using the definition $r_n = f_{n+1}(z)/f_n(z)$.

Calculating ratios via Eq. (7) instead of directly computing the functions themselves has an additional advantage: Since all the desired functions in the current method are off by a common factor, the ratios obtained by the method outlined above are all automatically correct. Hence, to obtain the correct final values for the functions, it only remains to compute one of the desired functions accurately via an independent technique. Once this function is known, all other orders can be computed

using these ratios. For example, if $j_o(z)$ is known, then $j_1(z)$ can be computed from $r_o(z)$ by its definition

$$j_1(z) = r_o(z)j_o(z). \tag{8}$$

This process can clearly be repeated to obtain $j_2(z)$, $j_3(z)$, etc.

As straightforward as this process is, a potential hazard exists if the "known" functional value is carelessly chosen. In order to understand this, consider first the analytical expressions for the first two spherical Bessel functions of the first kind [9]:

$$j_o(z) = \frac{\sin z}{z}$$

$$j_1(z) = \frac{\sin z}{z^2} - \frac{\cos z}{z} . \tag{9}$$

If $j_o(z)$ should be chosen as the function used for the normalization process, and if the real part of z happens to be close to zero, the functional values returned by the standard complex sine function of FORTRAN can be rather inaccurate [resulting in inaccurate values for all orders of $j_n(z)$]. This problem can be circumvented by either writing a subroutine to calculate sinz more accurately (using its elementary infinite series representation) or by normalizing via $j_1(z)$ instead. In generating the tables listed in this report $j_o(z)$ was used for all required normalizations with an accurate subroutine used for sinz in the case of small real argument.

One final difficulty arises during this normalization procedure. This difficulty occurs when the real part of the argument z is large relative to 2π. To understand this, consider the following expression for sinz:

$$\begin{aligned} \sin z = \sin(x+iy) &= \frac{e^{i(x+iy)} - e^{-i(x+iy)}}{2i} \\ &= \frac{1}{2i}\left[e^{-y}(\cos x + i\sin x) - e^{y}(\cos x - i\sin x)\right]. \end{aligned} \tag{10}$$

When the real part of z [represented by x in Eq. (10)] becomes large relative to 2π, the value of the trigonometric functions calculated by the standard FORTRAN routines can no longer be regarded to be accurate. To avoid this problem in generating the tables herein provided, the value of x was always taken to be the smallest possible quantity in excess of the largest possible integral multiple of 2π which does not exceed x. (It is assumed that when large values of x are used, these values are accurate to a sufficient number of digits to justify this procedure.) This process can be seen to be valid by examination of the theorems:

$$\sin(w+2\pi m) = \sin w$$
$$\cos(w+2\pi m) = \cos w \ , \tag{11}$$

where $w+2\pi m = x$, and m is chosen to be the largest integer which simultaneously satisfies this definition and yields the same mathematical sign for both w and x.

Essentially all of the above comments made regarding $j_n(z)$ are also applicable to the spherical Neumann function $y_n(z)$, with the exception that in this case the recurrence relation [Eq. (1)] must be iterated <u>forward</u>. This once again is the consequence of the fact that to avoid subtraction errors the recurrence relation must be used in the direction that causes the functional values to <u>increase</u>. In analogy to Eq. (2), we have for $y_n(z)$ [10]:

$$y_n(z) = \sqrt{\frac{\pi}{2z}}\ Y_{n+1/2}(z) \tag{12}$$

and in analogy to Eq. (3) we have [6]

$$Y_\nu(z) \to -\sqrt{\frac{2}{\pi\nu}}\ \left(\frac{ez}{2\nu}\right)^{-\nu} \tag{13}$$

(for $\nu \to \infty$ through real positive values).

As before, Eqs. (12) and (13) may be combined to yield

$$y_n(z) \to -\frac{1}{\sqrt{(n+1/2)z}}\left(\frac{2n+1}{ez}\right)^{n+1/2} \tag{14}$$

(for $n \to \infty$ through real positive values).

Equation (14) clearly shows that $y_n(z) \to \infty$ as $n \to \infty$, requiring forward iteration of recurrence relation. As with $j_n(z)$, however, it is safer to use the recurrence relation of ratios in order to avoid the problem of exceeding the larger number representable by the available digital computer. Difficulties similar to those encountered in analyzing $j_n(z)$ arise during the normalization procedure for large $|z|$ and small $|z|$, and similar resolutions were used in this case to generate the tabulated values.

III. TESTING AND VERIFICATION OF RESULTS

In addition to the previously published tables of spherical Bessel functions of complex argument previously mentioned [3], some tables of values for purely real and purely imaginary arguments were also available [11,12]. Excellent agreement was observed between values listed in these previously published tables and those obtained by the computer routines used to generate the tables of this report.

In the case of purely imaginary arguments a connection can be made with modified spherical Bessel functions of real arguments using the relations [13]:

$$i_n(x) = \sqrt{\frac{\pi}{2x}}\, I_{n+1/2}(x)$$

$$k_n(x) = \sqrt{\frac{\pi}{2x}}\, K_{n+1/2}(x)$$

$$\sqrt{\frac{\pi}{2x}}\, I_{n+1/2}(x) = e^{-n\pi i/2} j_n(xe^{\pi i/2})$$

$$\sqrt{\frac{\pi}{2x}}\, I_{-n-1/2}(x) = e^{3(n+1)\pi i/2} y_n(xe^{\pi i/2})$$

$$\sqrt{\frac{\pi}{2x}}\, K_{n+1/2}(x) = \frac{1}{2}\pi(-1)^{n+1} \sqrt{\frac{\pi}{2x}}\, [I_{n+1/2}(x) - I_{-n-1/2}(x)]. \qquad (15)$$

Reference 4 contains tables of the functions $i_n(x)$ and $k_n(x)$. Equations (15) can readily be combined to give:

$$j_n(ix) = e^{n\pi i/2} i_n(x)$$

$$y_n(ix) = e^{-3(n+1)\pi i/2}[i_n(x) - \frac{2}{\pi}(-1)^{-n-1} k_n(x)] \ . \qquad (16)$$

The values of $j_n(ix)$ and $y_n(ix)$ generated by using Eqs. (16) in bination with the tabulated values of $i_n(x)$ and $k_n(x)$ in Reference 4 were excellent agreement with the values obtained analyzing $j_n(z)$ and $y_n(z)$ with outines used to calculate the tables of this report.

Although these concordances are encouraging, they still do not establish general validity of the results for complex arguments. As was discussed in Section II, the accuracy of the results obtained by using the recurrence relations decreases if the actual behavior of $j_n(z)$ or $y_n(z)$ is contrary to the asymptotic behavior of these functions with respect to order. A method of testing the number of digits of accuracy of the resulting functions is available and consists simply of the substitution of the computed functions into a cross product theorem. For the tables in this report, the following theorem was used for this purpose [14]

$$j_n(z)\, y_{n-1}(z) - j_{n-1}(z)\, y_n(z) = z^{-2}. \qquad (17)$$

The accuracy to which this theorem is satisfied guarantees that the values listed in the tables are accurate to six digits (with the sixth digit rounded).

ACKNOWLEDGMENTS

The author gratefully acknowledges several valuable discussions concerning this work with Dr. A. L. VanBuren and Dr. Pieter S. Dubbelday of the Underwater Sound Reference Detachment of the Naval Research Laboratory. This work was supported by Naval Sea Systems Command, contrct NAVSEA 63R.

REFERENCES

1. R.H. Vogt, L. Flax, L.R. Dragonette, W.G. Neubauer, "Monostatic reflection of a plane wave from an absorbing sphere," J. Acoust. Soc. Am. 57, 558-561 (1975).

2. J.C. Piquette, "Dynamic Elastic Constant Determination via Measurement of the Acoustic Field Scattered by a Spherical Elastomer: Theory," NRL Memorandum Report 4873, Sep 15, 1982.

3. W.J. Lentz, "A new method of computing spherical Bessel functions of complex argument with tables," ECOM Technical Report 5509, Sep 1973.

4. M. Bramowitz and I.A. Stegun, Handbook of Mathematical Functions, Dover, 1972, p. 439, Eq. 10.1.19.

4a. Y.L. Luke, Mathematical Functions and Their Approximations, Academic Press (1975).

5. I.A. Stegun, M. Abramowitz, Math. Tables Aids to Comp. 11, pp. 255-257 (1957).

6. Reference 4, p. 365, Eq. 9.3.1.

7. Reference 4, p. 363, Eq. 9.1.76.

7a. R. Courant, Differential and Integral Calculus, Blackie and Son Limited (1948), p. 175.

8. Reference 4, p. 437, Section 10.1.1.

9. Reference 4, p. 438, Eqs. 10.1.11.

10. Reference 4, p. 437, Section 10.1.1.

11. Reference 4, pp. 457-466.

12. A.J. Rudgers, "Techniques for Numerically Evaluating the Formulas Describing Monostatic Reflection of Acoustic Waves by Elastic Spheres," NRL Report 6551, Jun 7, 1967.

13. Reference 4, pp. 443 and 469.

14. Reference 4, p. 439, Eq. 10.1.31.

(Blank)

APPENDIX A

Tables of $j_n(z)$ and $y_n(z)$ for z between (1,1) and (10,10) and n between 0 and 20

In the following tables (and those in Appendix B) the following notation is used:

> Two numbers enclosed in parentheses represent a complex number. For example, the expression (3,5) represents the complex number 3+5i. The notation Jn(z) represents the spherical Bessel function of the first kind [$j_n(z)$] and Yn(z) represents the spherical Bessel function of the second kind [$y_n(z)$]. Separate column headings are provided for the real and imaginary parts of each of the functions.

Z=(1 , 1)					Z=(1 , 2)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.966711E+00	-0.331747E+00	0.775838E-01	0.911314E+00	0.141700E+01	-0.874391E+00	0.814215E+00	0.142347E+01
1	0.395066E+00	0.262085E+00	-0.472262E+00	0.748512E+00	0.747857E+00	0.681792E+00	-0.684766E+00	0.833399E+00
2	0.190156E-01	0.132276E+00	0.336941E+00	0.919997E+00	-0.150131E+00	0.386038E+00	-0.224995E+00	-0.101719E+00
3	-0.168375E-01	0.210654E-01	0.361461E+01	0.709027E+00	-0.125913E+00	0.450819E-02	0.256350E+00	-0.485120E+00
4	-0.421801E-02	0.384472E-03	0.147958E+02	-0.110895E+02	-0.135241E-01	-0.271696E-01	-0.774450E+00	-0.129524E+01
5	-0.413395E-03	-0.354233E-03	0.139635E+02	-0.117193E+03	0.375902E-02	-0.472675E-02	-0.631321E+01	0.941714E+00
6	-0.394464E-05	-0.590840E-04	-0.587507E+03	-0.705321E+03	0.996265E-03	0.231093E-03	-0.897108E+01	0.311451E+02
7	0.370850E-05	-0.417262E-05	-0.841645E+04	-0.648595E+03	0.329515E-04	0.147008E-03	0.144943E+03	0.126685E+03
8	0.463732E-06	-0.244292E-07	-0.674003E+05	0.589642E+05	-0.153624E-04	0.122226E-04	0.120391E+04	-0.520748E+03
9	0.255757E-07	0.282489E-07	-0.632904E+05	0.107475E+07	-0.206974E-05	-0.986838E-06	0.407269E+03	-0.100838E+05
10	0.191166E-09	0.222537E-08	0.967624E+07	0.107524E+08	-0.256984E-08	-0.242618E-06	-0.762934E+05	-0.408931E+05
11	-0.970691E-10	0.105163E-09	0.214564E+09	0.102249E+08	0.209488E-07	-0.105723E-07	-0.664341E+06	0.479198E+06
12	-0.809016E-11	0.299770E-12	0.257539E+10	-0.236065E+10	0.166890E-08	0.125722E-08	0.142894E+07	0.835714E+07
13	-0.309995E-12	-0.289321E-12	0.246973E+10	-0.617108E+11	-0.320525E-10	0.169373E-09	0.913805E+08	0.270171E+08
14	-0.666924E-15	-0.206675E-13	-0.802330E+12	-0.864076E+12	-0.127592E-10	0.356158E-11	0.783810E+09	-0.849374E+09
15	0.646519E-15	-0.686940E-15	-0.241654E+14	-0.833615E+12	-0.636740E-12	-0.702681E-12	-0.539802E+10	-0.140456E+11
16	0.404097E-16	-0.115488E-17	-0.386682E+15	0.362506E+15	0.237995E-13	-0.598278E-13	-0.208417E+12	-0.192978E+14
17	0.118582E-17	0.112340E-17	-0.374735E+15	0.120624E+17	0.409026E-14	-0.336030E-15	-0.162488E+13	0.263778E+13
18	0.160070E-20	0.624134E-19	0.210171E+18	0.222536E+18	0.127860E-15	0.211925E-15	0.257632E+14	0.412321E+14
19	-0.156135E-20	0.162943E-20	0.896550E+19	0.216417E+13	-0.760300E-17	0.119495E-16	0.892508E+15	-0.788148E+14
20	-0.780698E-22	0.181591E-23	0.160117E+21	-0.152110E+21	-0.766899E-18	-0.811211E-19	0.500429E+16	-0.131751E+17

Z=(1 , 3)					Z=(1 , 4)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.247097E+01	-0.200023E+01	0.198497E+01	0.247485E+01	0.482108E+01	-0.453950E+01	0.453529E+01	0.482250E+01
1	0.163200E+01	0.153354E+01	-0.158002E+01	0.165222E+01	0.375077E+01	0.342110E+01	-0.341959E+01	0.375605E+01
2	-0.651167E+00	0.991490E+00	-0.956974E+00	-0.602168E+00	-0.174428E+01	0.249562E+01	-0.248742E+01	-0.174584E+01
3	-0.415056E+00	-0.136010E+00	0.148279E+00	-0.517843E+00	-0.132776E+01	-0.634993E+00	0.634067E+00	-0.134316E+01
4	0.381639E-02	-0.151450E+00	-0.267012E-01	-0.717014E-01	0.151687E+00	-0.570186E+00	0.536252E+00	0.148429E+00
5	0.398755E-01	-0.105983E-01	-0.365920E+00	0.525400E+00	0.200617E+00	0.119095E-01	-0.358501E-01	0.286143E+00
6	0.507059E-02	0.820208E-02	0.185801E+01	0.185718E+01	0.894866E-02	0.586468E-01	0.181157E+00	0.129512E+00
7	-0.129531E-02	0.148581E-02	0.937434E+01	-0.340730E+01	-0.143840E-01	0.556566E-02	0.570535E+00	-0.741234E+00
8	-0.327891E-03	-0.143552E-03	-0.262034E+01	-0.491526E+02	-0.199692E-02	-0.296890E-02	-0.229386E+01	-0.279719E+01
9	0.613569E-05	-0.580685E-04	-0.264523E+03	-0.667426E+02	0.511458E-03	-0.546889E-03	-0.140532E+02	0.711949E+01
10	0.846957E-05	-0.175720E-05	-0.830897E+03	0.143012E+04	0.123635E-03	0.711568E-04	0.184157E+02	0.735802E+02
11	0.579031E-06	0.102011E-05	0.782543E+04	0.851650E+04	-0.713483E-05	0.238870E-04	0.400375E+03	-0.722134E+01
12	-0.990251E-07	0.108150E-06	0.774128E+05	-0.328478E+05	-0.401668E-05	-0.226982E-06	0.484188E+03	-0.225009E+04
13	-0.154738E-07	-0.704220E-08	-0.602521E+05	-0.671332E+06	-0.107241E-06	-0.593300E-06	-0.129241E+05	-0.614989E+04
14	0.205106E-09	-0.182603E-08	-0.567788E+07	-0.129171E+07	0.771568E-07	-0.340216E-07	-0.600806E+05	0.745888E+05
15	0.182127E-09	-0.877076E-10	-0.876404E+08	0.463229E+08	0.671432E-08	0.878185E-08	0.419393E+06	0.543352E+06
16	0.850734E-11	0.153535E-10	0.350787E+09	0.401077E+09	-0.857143E-09	0.106051E-08	0.478813E+07	-0.214287E+07
17	-0.106[illegible]E-11	0.118143E-11	0.516481E+10	-0.219259E+10	-0.143630E-09	-0.677493E-10	-0.776356E+07	-0.418814E+08
18	-0.123629E-12	-0.344854E-12	-0.529512E+10	-0.623005E+11	0.349963E-11	-0.171623E-10	-0.365678E+09	-0.201484E+08
19	0.105600E-14	-0.108482E-13	-0.716566E+12	-0.169553E+12	0.183038E-11	-0.714377E-13	-0.963534E+09	0.318158E+10
20	0.816461E-15	-0.183697E-15	-0.477231E+13	0.773249E+13	0.504697E-13	0.175847E-12	0.273509E+11	0.161609E+11

Z=(1 , 5)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.101116E+02	-0.104667E+02	0.[illegible]E+02	0.101123E+02
1	0.[illegible]E+01	0.776512E+01	-0.[illegible]E+01	0.[illegible]E+01
2	-0.[illegible]E+01	0.[illegible]E+01	-0.625965E+01	-0.461233E+01
3	-0.[illegible]E+01	-0.212659E+01	0.[illegible]E+01	-0.371117E+01
4	0.750835E+00	-0.[illegible]E+01	0.183620E+01	0.751412E+00
5	0.[illegible]E+00	0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00
6	-0.225260E-01	0.289247E+00	-0.[illegible]E+00	-0.144187E-01
7	-0.[illegible]E-01	0.[illegible]E-02	0.344754E-01	-0.[illegible]E+00
8	-0.[illegible]E-02	-0.[illegible]E-01	-0.[illegible]E+00	-0.[illegible]E+00
9	0.[illegible]E-02	-0.[illegible]E-02	-0.[illegible]E+00	0.[illegible]E+01
10	0.[illegible]E-03	0.[illegible]E-02	0.[illegible]E+01	0.[illegible]E+01
11	-0.[illegible]E-03	0.[illegible]E-03	0.[illegible]E+02	-0.[illegible]E+02
12	-0.[illegible]E-04	-0.[illegible]E-03	-0.[illegible]E+02	-0.[illegible]E+02
13	[illegible]	-0.[illegible]E-04	-0.[illegible]E+03	0.[illegible]E+03
14	0.[illegible]E-05	0.[illegible]E-05	0.[illegible]E+04	0.[illegible]E+04
15	-0.[illegible]E-05	0.[illegible]E-06	0.[illegible]E+05	0.[illegible]E+04
16	-0.[illegible]E-07	0.[illegible]E-08	0.[illegible]E+05	-0.[illegible]E+06
17	-0.[illegible]E-08	-0.[illegible]E-08	-0.[illegible]E+06	-0.[illegible]E+06
18	0.[illegible]E-09	-0.[illegible]E-09	-0.[illegible]E+07	0.[illegible]E+07
19	0.[illegible]E-10	0.[illegible]E-10	0.[illegible]E+08	0.[illegible]E+08
20	-0.[illegible]E-11	0.[illegible]E-11	0.[illegible]E+09	-0.[illegible]E+09

Z=(1 , 6)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.223609E+02	-0.245795E+02	0.245791E+02	0.222611E+02
1	0.211949E+02	0.179869E+02	-0.179867E+02	0.211953E+02
2	-0.117920E+02	0.157269E+02	-0.157263E+02	-0.117923E+02
3	-0.160869E+02	-0.630053E+01	0.630027E+01	-0.100379E+02
4	0.274121E+01	-0.552560E+01	0.552386E+01	0.274154E+01
5	0.263931E+01	0.955790E+00	-0.955461E+00	0.264289E+01
6	-0.251622E+00	0.110179E+01	-0.109357E+01	-0.251480E+00
7	-0.382271E-01	0.410854E-01	-0.425879E+00	
8	-0.556559E-02	-0.182060E+00	0.743066E-01	-0.211107E-01
9	0.384234E-01	-0.710591E-02	-0.651415E-01	0.211334E+00
10	0.340932E-02	0.100250E-01	0.543379E+00	0.330340E+00
11	-0.233598E-02	0.120846E-02	0.149849E+01	-0.187427E+01
12	-0.352135E-03	-0.497425E-03	-0.660241E+01	-0.708438E+01
13	0.945676E-04	-0.926536E-04	-0.346800E+02	0.238541E+02
14	0.214187E-04	0.160206E-04	0.857374E+02	0.176334E+03
15	-0.238017E-05	0.448643E-05	0.931125E+03	-0.288844E+03
16	-0.859470E-06	-0.295506E-06	-0.757634E+03	-0.309913E+04
17	-0.431931E+06	0.269019E-07	-0.151560E-06	-0.288941E+05	-0.204658E+03
18	0.[illegible]E+07	0.[illegible]E-07	0.452503E-09	-0.277362E+05	0.168899E+06
19	0.[illegible]E+08	0.[illegible]E+08	0.523740E-09	0.373693E-08	0.101455E+07	0.335521E+06
20	-0.[illegible]E+09	-0.139699E+09	-0.524849E-09	0.161477E-09	0.321907E+07	-0.623159E+07

Z=(1 , 7)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	[illegible]	-0.[illegible]E+02	[illegible]	0.[illegible]E+02
1	[illegible]	0.[illegible]E+02	-0.[illegible]E+02	0.[illegible]E+02
2	-0.[illegible]E+02	0.[illegible]E+02	-0.[illegible]E+02	-0.[illegible]E+02
3	-0.[illegible]E+02	-0.[illegible]E+02	0.[illegible]E+02	-0.[illegible]E+02
4	[illegible]	-0.[illegible]E+01	0.[illegible]E+01	0.[illegible]E+01
5	[illegible]	0.[illegible]E+01	-0.[illegible]E+01	0.[illegible]E+01
6	-0.[illegible]E+01	0.[illegible]E+01	-0.[illegible]E+01	-0.[illegible]E+01
7	[illegible]	-0.[illegible]E+00	-0.[illegible]E+01	-0.[illegible]E+01
8	[illegible]	-0.[illegible]E-01	-0.[illegible]E+00	0.[illegible]E+00
9	[illegible]	-0.[illegible]E+00	-0.[illegible]E-02	0.[illegible]E+00
10	[illegible]	0.[illegible]E-01	0.[illegible]E+01	-0.[illegible]E-02
11	-0.[illegible]	0.[illegible]E-02	0.[illegible]E+00	-0.[illegible]E+00
12	[illegible]	-0.[illegible]E-02	-0.[illegible]E+00	-0.[illegible]E+00
13	[illegible]	-0.[illegible]E-03	-0.[illegible]E+01	0.[illegible]E+01
14	[illegible]	0.[illegible]E-03	0.[illegible]E+02	0.[illegible]E+01
15	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]

Z=(1 , 8)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.[illegible]E+03	-0.141973E+03	0.141973E+03	0.[illegible]E+03
1	0.[illegible]E+03	0.101653E+03	-0.101653E+03	0.[illegible]E+03
2	-0.[illegible]E+03	0.100023E+03	-0.100023E+03	-0.[illegible]E+02
3	-0.[illegible]E+02	-0.477753E+02	0.477757E+02	-0.[illegible]E+02
4	0.[illegible]E+02	0.443940E+02	-0.443941E+02	0.[illegible]E+02
5	0.[illegible]E+02	0.125083E+02	-0.125083E+02	0.[illegible]E+02
6	-0.[illegible]E+01	0.126562E+02	-0.126558E+02	-0.512333E+01
7	-0.[illegible]E+01	-0.177973E+01	0.177973E+01	-0.578199E+01
8	-0.[illegible]E+01	-0.239424E+01	0.239207E+01	0.503280E+00
9	0.[illegible]E+00	0.[illegible]E+00	-0.101143E+00	0.908655E+00
10	-0.[illegible]E+00	-0.354194E-02	0.311663E+00	-0.296782E+00	-0.115501E-02
11	-0.[illegible]	0.[illegible]E+00	-0.[illegible]E+00	0.906238E-02	0.227394E-02	-0.141961E+00
12	[illegible]	-0.[illegible]E+00	-0.[illegible]E+00	-0.575596E-02	-0.268509E-01	-0.104271E+00	-0.555142E-01
13	[illegible]	-0.[illegible]E-01	-0.[illegible]E+01	0.778956E-02	-0.244819E-02	-0.213191E+00	0.441442E+00
14	[illegible]	0.[illegible]E-02	0.[illegible]E+02	0.[illegible]E-03	0.194063E-02	0.148266E+01	0.947332E+00
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Z=(1 , 9)					Z=(1 , 10)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.281839E+03	-0.347491E+03	0.347491E+03	0.281839E+03	0.680911E+03	-0.858640E+03	0.858640E+03	0.680912E+03
1	0.312789E+03	0.246667E+03	-0.246667E+03	0.312789E+03	0.780368E+03	0.604993E+03	-0.604993E+03	0.780368E+03
2	-0.189175E+03	0.253524E+03	-0.253524E+03	-0.189175E+03	-0.478031E+03	0.644818E+03	-0.644818E+03	-0.478031E+03
3	-0.185195E+03	-0.127393E+03	0.127393E+03	-0.185195E+03	-0.484816E+03	-0.336422E+03	0.336422E+03	-0.484816E+03
4	0.754911E+02	-0.122115E+03	0.122115E+03	0.754911E+02	0.211266E+03	-0.332123E+03	0.332123E+03	0.211266E+03
5	0.728545E+02	0.394196E+02	-0.394196E+02	0.728545E+02	0.207691E+03	0.118570E+03	-0.118570E+03	0.207691E+03
6	-0.181259E+02	0.394446E+02	-0.394445E+02	-0.181259E+02	-0.595107E+02	0.118839E+03	-0.118839E+03	-0.595107E+02
7	-0.194474E+02	-0.730367E+01	0.730363E+01	-0.194476E+02	-0.623897E+02	-0.266762E+02	0.266761E+02	-0.623898E+02
8	0.254411E+01	-0.876362E+01	0.876313E+01	0.254417E+01	0.106268E+02	-0.301426E+02	0.301425E+02	0.106268E+02
9	0.362319E+01	0.739881E+00	-0.739837E+00	0.362433E+01	0.134434E+02	0.371597E+01	-0.371594E+01	0.134437E+02
10	-0.161671E+00	0.137938E+01	-0.137651E+01	-0.161553E+00	-0.110740E+01	0.555205E+01	-0.555145E+01	-0.110743E+01
11	-0.485278E+00	-0.139925E-01	0.140566E-01	-0.493007E+00	-0.212978E+01	-0.259062E+00	0.259096E+00	-0.213130E+01
12	-0.976622E-02	-0.158278E+00	0.136165E+00	-0.144861E-01	0.324594E-01	-0.761052E+00	0.756990E+00	0.320678E-01
13	0.480015E-01	-0.746537E-02	-0.131914E-01	0.114968E+00	0.254023E+00	-0.966161E-02	0.765409E-02	0.265500E+00
14	0.344859E-02	0.135714E-01	0.200188E+00	0.914328E-01	0.961977E-02	0.793966E-01	-0.451907E-01	0.184461E-01
15	-0.358505E-02	0.128843E-02	0.375013E+00	-0.719816E+00	-0.232908E-01	0.483754E-02	0.323344E-01	-0.130449E+00
16	-0.420117E-03	-0.866420E-03	-0.250755E+01	-0.163952E+01	-0.192054E-02	-0.642527E-02	-0.345272E+00	-0.157729E+00
17	0.295407E-03	-0.123513E-03	-0.732241E+01	0.914222E+01	0.166983E-02	-0.661867E-03	-0.660498E+00	0.120703E+01
18	0.333209E-04	0.446384E-04	0.345016E+02	0.336704E+02	0.205590E-03	0.409385E-03	0.429916E+01	0.286486E+01
19	-0.909622E-05	0.833932E-05	0.159625E+03	-0.134060E+03	-0.947817E-04	0.586869E-04	0.127305E+02	-0.159069E+02
20	-0.195076E-05	-0.173589E-05	-0.532423E+03	-0.780704E+03	-0.155762E-04	-0.207351E-04	-0.608062E+02	-0.581644E+02

Z=(2 , 1)					Z=(2 , 2)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.463406E+00	-0.476243E+00	0.470581E+00	0.299013E+00	0.477912E+00	-0.123257E+01	0.121588E+01	0.433067E+00
1	0.560706E+00	0.158275E-01	-0.215401E+00	0.501736E+00	0.102722E+01	0.544788E-02	-0.656752E-01	0.103686E+01
2	0.218997E+00	0.158816E+00	-0.428021E+00	0.432105E+00	0.296586E+00	0.466239E+00	-0.487490E+00	0.393836E+00
3	0.339243E-01	0.828967E-01	-0.208331E+00	0.790905E+00	-0.736855E-01	0.206617E+00	-0.513926E-01	0.647951E-01
4	-0.226386E-02	0.230009E-01	0.951964E+00	0.207339E+01	-0.639559E-01	0.242913E-01	0.510944E+00	-0.190507E+00
5	-0.267274E-02	0.398144E-02	0.736840E+01	0.496156E+01	-0.155598E-01	-0.806126E-02	0.772376E+00	-0.164306E+01
6	-0.737027E-03	0.397508E-03	0.423844E+02	0.354650E+01	-0.100202E-02	-0.367034E-02	-0.290533E+01	-0.645195E+01
7	-0.126274E-03	0.186980E-05	0.222252E+03	-0.967193E+02	0.374625E-03	-0.610767E-03	-0.311835E+02	-0.988344E+01
8	-0.150105E-04	-0.746554E-05	0.100097E+04	-0.125062E+04	0.116487E-03	-0.248861E-04	-0.151096E+03	0.863272E+02
9	-0.117971E-05	-0.159981E-05	0.283223E+04	-0.118108E+05	0.146774E-04	0.993301E-05	-0.244083E+03	0.101893E+04
10	-0.346278E-07	-0.210129E-06	-0.281569E+05	-0.973737E+05	0.412842E-06	0.235014E-05	0.383163E+04	0.591299E+04
11	0.629691E-08	-0.198366E-07	-0.647820E+06	-0.687E09E+06	-0.171741E-06	0.237832E-06	0.514033E+05	0.990823E+04
12	0.131099E-08	-0.133313E-08	-0.909598E+07	-0.325105E+07	-0.328199E-07	0.489776E-08	0.348710E+06	-0.244510E+06
13	0.147303E-09	-0.496274E-10	-0.106567E+09	0.136373E+08	-0.277223E-08	-0.209643E-08	0.599847E+06	-0.371753E+07
14	0.119021E-10	0.171583E-11	-0.100[08E+10	0.726213E+09	-0.436128E-10	-0.336135E-09	-0.213931E+08	-0.288978E+08
15	0.712652E-12	0.[99[89E-12	-0.807113E+10	0.146053E+11	0.190617E-10	-0.243495E-10	-0.365209E+09	-0.506916E+08
16	0.279643E-13	0.520640E-13	-0.346122E+10	0.230420E+12	0.263296E-11	-0.302219E-12	-0.320183E+10	0.246640E+10
17	0.989093E-16	0.378312E-14	0.141716E+13	0.[08279E+13	0.166890E-12	0.134212E-12	-0.570209E+10	0.468137E+11
18	-0.[76797E-16	0.[07328E-15	0.414289E+14	0.330065E+14	0.167607E-14	0.162846E-13	0.362928E+12	0.457046E+12
19	-0.103650E-16	0.31160[E-17	0.[55[85E+15	0.[79575E+15	-0.753728E-15	0.917268E-15	0.739046E+13	0.823780E+12
20	-0.765099E-18	0.141764E-18	0.1[70[1E+17	-0.891928E+16	-0.815450E-16	0.760744E-17	0.816760E+14	-0.664322E+14

Z=(2 , 3)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.446329E+00	-0.275595E+01	0.274669E+01	0.435583E+00
1	0.217963E+01	-0.921002E-01	0.765266E-01	0.218695E+01
2	0.495983E+00	0.139238E+01	-0.119732E+01	0.521801E+00
3	-0.411000E+00	0.414660E+00	-0.395465E+00	-0.404045E+00
4	-0.220270E+00	-0.598199E-01	0.110748E+00	-0.318098E+00
5	-0.176077E-01	-0.696083E-01	-0.150779E+00	-0.283029E+00
6	0.137742E-01	-0.135822E-01	-0.100775E+01	0.949492E-01
7	0.410960E-02	0.112133E-02	-0.162988E+01	0.349619E+01
8	0.283495E-03	0.905572E-03	0.934868E+01	0.186151E+02
9	-0.115600E-03	0.134914E-03	0.794933E+02	-0.456312E+01
10	-0.298537E-04	-0.434710E-05	0.203309E+03	-0.375501E+03
11	-0.192400E-05	-0.427337E-05	-0.124335E+04	-0.219241E+04
12	0.365957E-06	-0.562044E-06	-0.162392E+05	-0.782901E+03
13	0.889639E-07	0.374764E-09	-0.657318E-05	0.928689E+05
14	0.594091E-08	0.925541E-08	0.321844E+06	0.796106E+06
15	-0.523231E-09	0.116018E-08	0.682943E+07	0.130511E+07
16	-0.136801E-09	0.212392E-10	0.415858E+08	-0.434285E+08
17	-0.950327E-11	-0.103582E-10	-0.126426E+09	-0.538480E+09
18	0.352160E-12	-0.133368E-11	-0.567160E+10	-0.183495E+10
19	0.120566E-12	-0.202758E-13	-0.444103E+11	0.333971E+11
20	0.875646E-14	0.689676E-14	0.391682E+11	0.601911E+12

Z=(2 , 4)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.211858E+00	-0.610192E+01	0.609935E+01	0.208618E+00
1	0.490015E+01	-0.443986E+00	0.439851E+00	0.490291E+01
2	0.991876E+00	0.302865E+01	-0.302565E+01	0.998345E+00
3	-0.137556E+01	0.966386E+00	-0.954331E+00	-0.137809E+01
4	-0.601828E+00	-0.426397E+00	0.428292E+00	-0.626945E+00
5	0.664015E-01	-0.266853E+00	0.211292E+00	0.429140E-01
6	0.877927E-01	-0.132248E-01	-0.101460E+00	0.209308E+00
7	0.133445E-01	0.213996E-01	0.201011E+00	0.492982E+00
8	-0.357703E-02	0.529067E-02	0.188192E+01	-0.728692E-01
9	-0.143720E-02	-0.243570E-03	0.275050E+01	-0.701540E+01
10	-0.792049E-04	-0.292114E-03	-0.233145E+02	-0.237083E+02
11	0.439860E-04	-0.372092E-04	-0.151286E+03	0.551488E+02
12	0.921045E-05	0.419741E-05	-0.709584E+02	0.846465E+03
13	0.271573E-07	0.165045E-05	0.420622E+04	0.241581E+04
14	-0.224702E-06	0.112154E-06	0.244731E+05	-0.170374E+05
15	-0.282981E-07	-0.219324E-07	-0.320509E+05	-0.193768E+06
16	0.996882E-09	-0.469663E-08	-0.132519E+07	-0.384928E+06
17	0.589996E-09	-0.145920E-09	-0.688161E+07	0.766978E+07
18	0.466656E-10	0.559379E-10	0.309280E+08	0.734004E+08
19	-0.339319E-11	0.756429E-11	0.679279E+09	0.424446E+08
20	-0.897629E-12	0.296978E-13	0.294933E+10	-0.520824E+10

Z=(2 , 5)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.670021E+00	-0.137639E+02	0.137630E+02	-0.671228E+00
1	0.113437E+02	-0.139489E+01	0.150377E+01	0.113417E+02
2	0.223891E+01	0.758511E+01	-0.758399E+01	0.224059E+01
3	-0.493281E+01	0.219085E+01	-0.218759E+01	-0.493414E+01
4	-0.154226E+01	-0.166052E+01	0.165921E+01	-0.154815E+01
5	0.498884E+00	-0.827861E+00	0.814988E+00	0.498586E+00
6	[illegible]	0.860235E-01	-0.958874E-01	0.350820E+00
7	0.896498E-02	0.119341E+00	-0.468944E-01	0.566338E-01
8	-0.327245E-01	0.139471E-01	[illegible]	-0.200950E+00
9	-0.645224E-02	-0.707229E-02	-0.315401E+00	-0.258967E+00
10	0.110198E-02	-0.297757E-02	-0.342030E+01	0.103625E+00
11	0.625964E-05	0.734585E-04	-0.424518E+01	0.134009E+02
12	0.256065E-04	0.108377E-03	0.492222E+02	-0.379821E+02
13	[illegible]	[illegible]	[illegible]	-0.162591E+03
14	-0.313461E-05	-0.233331E-05	[illegible]	[illegible]
15	[illegible]	-0.689645E-06	[illegible]	[illegible]
16	[illegible]	-0.916642E-08	[illegible]	[illegible]
17	[illegible]	0.145199E-07	[illegible]	[illegible]
18	[illegible]	0.169110E-08	[illegible]	-0.768762E+06
19	[illegible]	-0.117993E-09	[illegible]	-0.145775E+08
20	[illegible]	[illegible]	[illegible]	[illegible]

Z=(2 , 6)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.342037E+01	-0.317100E+02	0.317098E+02	-0.342064E+01
1	0.267822E+02	-0.449308E+01	0.449276E+01	0.267825E+02
2	0.541532E+01	0.189841E+02	-0.189837E+02	0.541628E+01
3	-0.111902E+02	0.517724E+01	-0.517648E+01	-0.111907E+02
4	-0.389629E+01	-0.542231E+01	0.542169E+01	-0.389772E+01
5	0.211677E+01	-0.235729E+01	0.235431E+01	0.211746E+01
6	0.117099E+01	0.633134E+00	-0.633011E+00	0.117770E+01
7	-0.121014E+00	0.485391E+00	-0.469247E+00	-0.117576E+00
8	-0.169623E+00	0.519135E-02	0.165298E-01	-0.210080E+00
9	-0.150274E-01	-0.501393E-01	-0.324055E-01	-0.103143E+00
10	0.124560E-01	-0.799566E-02	-0.360272E+00	0.261450E+00
11	0.291333E-02	0.252639E-02	0.497687E+00	0.151252E+01
12	[illegible]	0.349272E-03	0.615081E+01	-0.239068E+00
13	-0.207901E-03	-0.271502E-04	0.629433E+01	-0.248769E+02
14	[illegible]	-0.403626E-04	-0.984030E+02	-0.338368E+02
15	0.780255E-05	[illegible]	-0.404922E+03	0.367625E+03
16	0.113789E-05	0.117016E-05	0.118023E+04	0.251154E+04
17	[illegible]	0.252960E-06	0.147344E+05	-0.266574E+04
18	-0.472243E-07	-0.907993E-08	0.138474E+05	-0.637449E+05
19	[illegible]	-0.739321E-08	-0.453951E+06	-0.229715E+06
20	[illegible]	-0.479142E-09	-0.224289E+07	0.229141E+07

n	Z=(2 , 7) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	Z=(2 , 8) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.113225E+02	-0.744612E+02	0.744611E+02	-0.113226E+02	-0.331101E+02	-0.177689E+03	0.177689E+03	-0.331101E+02
1	0.641993E+02	-0.126370E+02	0.126369E+02	0.641994E+02	0.155810E+03	-0.344410E+02	0.344409E+02	0.155810E+03
2	0.135832E+02	0.475931E+02	-0.475930E+02	0.135834E+02	0.347024E+02	0.119658E+03	-0.119658E+03	0.347025E+02
3	-0.302070E+02	0.125468E+02	-0.126465E+02	-0.302072E+02	-0.803199E+02	0.316245E+02	-0.316244E+02	-0.803200E+02
4	-0.987014E+01	-0.163252E+02	0.163250E+02	-0.987051E+01	-0.251952E+02	-0.470011E+02	0.470010E+02	-0.251953E+02
5	0.744952E+01	-0.645877E+01	0.645805E+01	0.744982E+01	0.238847E+02	-0.173887E+02	0.173886E+02	0.238849E+02
6	0.357891E+01	0.282130E+01	-0.282094E+01	0.358044E+01	0.104195E+02	0.104657E+02	-0.104655E+02	0.104199E+02
7	-0.849704E+00	0.169789E+01	-0.169436E+01	-0.849684E+00	-0.389448E+01	0.545458E+01	-0.545378E+01	-0.389467E+01
8	-0.696136E+00	-0.176860E+00	0.178130E+00	-0.704744E+00	-0.251196E+01	-0.118664E+01	0.118649E+01	-0.251382E+01
9	0.602538E-02	-0.248321E+00	0.226286E+00	-0.216798E-02	0.265222E+00	-0.102398E+01	0.101938E+01	0.264777E+00
10	0.773120E-01	-0.163015E-01	-0.213276E-01	0.135340E+00	0.371263E+00	0.215649E-01	-0.249834E-01	0.383162E+00
11	0.100278E-01	0.209709E-01	0.132190E+00	0.168573E+00	0.173662E-01	0.120064E+00	-0.881731E-01	0.336053E-01
12	-0.490308E-02	0.404238E-02	0.648138E+00	-0.390591E+00	-0.346372E-01	0.126639E-01	0.562656E-01	-0.121830E+00
13	-0.130724E-02	-0.961300E-03	-0.810427E+00	-0.267713E+01	-0.558797E-02	-0.887812E-02	-0.228772E+00	-0.288673E+00
14	0.145143E-03	-0.360139E-03	-0.110206E+02	0.552958E+00	0.199858E-02	-0.196414E-02	-0.115490E+01	0.619278E+00
15	0.856705E-04	0.112601E-04	-0.913193E+01	0.454933E+02	0.591463E-03	0.384135E-03	0.135654E+01	0.475712E+01
16	0.235689E-05	0.184200E-04	0.186603E+03	0.900548E+02	-0.583417E-04	0.157277E-03	0.197413E+02	-0.122930E+01
17	-0.346004E-05	0.140557E-05	0.634008E+03	-0.746656E+03	-0.374830E-04	-0.498063E-05	0.130315E+02	-0.825928E+02
18	-0.429329E-06	-0.569080E-06	-0.230076E+04	-0.409700E+04	-0.752187E-06	-0.896277E-05	-0.346414E+03	-0.137452E+03
19	0.796222E-07	-0.102088E-06	-0.241259E+05	0.883371E+04	0.156766E-05	-0.519338E-06	-0.988332E+03	0.144093E+04
20	0.206616E-07	0.870878E-08	0.128224E+05	0.141286E+06	0.167535E-06	0.274286E-06	0.582409E+04	0.632499E+04

n	Z=(2 , 9) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	Z=(2 , 10) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.918378E+02	-0.429743E+03	0.429742E+03	-0.918378E+02	-0.248102E+03	-0.105105E+04	0.105105E+04	-0.248102E+03
1	0.332084E+03	-0.922255E+02	0.922255E+02	0.332084E+03	0.945217E+03	-0.244459E+03	0.244459E+03	0.945217E+03
2	0.895133E+02	0.301870E+03	-0.301870E+03	0.895133E+02	0.232117E+03	0.764289E+03	-0.764289E+03	0.232117E+03
3	-0.211740E+03	0.893503E+02	-0.893502E+02	-0.211740E+03	-0.555452E+03	0.206353E+03	-0.206353E+03	-0.555452E+03
4	-0.648344E+02	-0.131699E+03	0.131699E+03	-0.648344E+02	-0.167998E+03	-0.362649E+03	0.362649E+03	-0.167998E+03
5	0.725087E+02	-0.464561E+02	0.464561E+02	0.725087E+02	0.212545E+03	-0.123737E+03	0.123737E+03	0.212545E+03
6	0.294936E+02	0.352241E+02	-0.352240E+02	0.294937E+02	0.820835E+02	0.111667E+03	-0.111667E+03	0.820835E+02
7	-0.150022E+02	0.166335E+02	-0.166333E+02	-0.150023E+02	-0.524400E+02	0.490491E+02	-0.490490E+02	-0.524401E+02
8	-0.837097E+01	-0.552638E+01	0.552627E+01	-0.837099E+01	-0.264666E+02	-0.218834E+02	0.218834E+02	-0.264667E+02
9	0.170650E+01	-0.377702E+01	0.377603E+01	0.170660E+01	0.801657E+01	-0.129406E+02	0.129404E+02	0.801663E+01
10	0.153500E+01	0.404744E+00	-0.404881E+00	0.153746E+01	0.575422E+01	0.250946E+01	-0.250939E+01	0.575476E+01
11	-0.480737E-01	0.563908E+00	-0.357492E+00	-0.466474E-01	-0.625573E+00	0.233494E+01	-0.233361E+01	-0.625543E+00
12	-0.187728E+00	0.175039E-01	-0.104204E-01	-0.205051E+00	-0.367115E+00	-0.932177E-01	0.938087E-01	-0.870581E+00
13	-0.160268E-01	-0.366837E-01	0.837955E-02	-0.463876E-01	-0.153900E-01	-0.295343E+00	0.285963E+00	-0.185068E-01
14	0.155018E-01	-0.771400E-02	-0.116748E+00	0.151054E+00	0.923693E-01	-0.201784E-01	0.662582E-02	0.118569E+00
15	0.291293E-02	0.382026E-02	0.373584E+00	0.507930E+00	0.106369E-01	0.265210E-01	0.483569E-01	0.661573E-01
16	-0.888724E-03	0.942227E-03	0.265790E+01	-0.101336E+01	-0.697495E-02	0.428303E-02	0.219403E+00	-0.223270E+00
17	-0.270715E-03	-0.159446E-03	-0.281830E+01	-0.848533E+01	-0.147289E-02	-0.167091E-02	-0.617573E+00	-0.904029E+00
18	0.244940E-04	-0.702938E-04	-0.354129E+02	0.261752E+01	0.360327E-03	-0.450839E-03	-0.367748E+01	0.169316E+01
19	0.166746E-04	0.228694E-05	-0.182570E+02	0.149499E+03	0.125328E-03	0.681884E-04	0.402464E+01	0.151921E+02
20	0.132008E-06	0.861830E-08	0.636004E+03	0.209961E+03	-0.106241E-04	0.319993E-04	0.636664E+02	-0.539147E+01

Z=(3 , 1)					Z=(3 , 2)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.510162E-01	-0.370803E+00	0.474876E+00	-0.103011E+00	-0.429874E+00	-0.910272E+00	0.938252E+00	-0.454894E+00
1	0.422490E+00	-0.209151E+00	0.183178E+00	0.292417E+00	0.699009E+00	-0.598822E+00	0.576410E+00	0.660950E+00
2	0.368512E+00	0.558248E-01	-0.222291E+00	0.311233E+00	0.637424E+00	0.173083E+00	-0.234145E+00	0.646439E+00
3	0.158190E+00	0.108633E+00	-0.360997E+00	0.285577E+00	0.169621E+00	0.308200E+00	-0.349317E+00	0.265053E+00
4	0.397361E-01	0.615704E-01	-0.335900E+00	0.541177E+00	-0.315044E-01	0.142122E+00	-0.446941E-01	0.157911E+00
5	0.449438E-02	0.218504E-01	-0.588732E-01	0.147791E+01	-0.382697E-01	0.305896E-01	0.475137E+00	0.124801E+00
6	-0.863097E-03	0.559200E-02	0.176732E+01	0.440069E+01	-0.138749E-01	0.292973E-03	0.146201E+01	-0.645188E+00
7	-0.590695E-03	0.108046E-02	0.126723E+02	0.133873E+02	-0.276895E-02	-0.196088E-02	0.262053E+01	-0.498439E+01
8	-0.175236E-03	0.156426E-03	0.753391E+02	0.368335E+02	-0.235070E-03	-0.690746E-03	-0.389340E+01	-0.226558E+02
9	-0.368029E-04	0.152092E-04	0.434174E+03	0.463873E+02	0.401871E-04	-0.134170E-03	-0.771484E+02	-0.737135E+02
10	-0.609924E-05	0.342111E-06	0.248739E+04	-0.597356E+03	0.190872E-04	-0.150951E-04	-0.549843E+03	-0.750387E+02
11	-0.819495E-06	-0.232295E-06	0.139832E+05	-0.963367E+04	0.383121E-05	-0.218270E-06	-0.282991E+04	0.148648E+04
12	-0.895489E-07	-0.622083E-07	0.732189E+05	-0.938963E+05	0.475380E-06	0.290949E-06	-0.921058E+04	0.179783E+05
13	-0.764316E-08	-0.103949E-07	0.380418E+06	-0.878236E+06	0.303967E-07	0.684369E-07	0.188394E+05	0.137660E+06
14	-0.525858E-09	-0.135387E-08	-0.110673E+05	-0.783094E+07	-0.170861E-08	0.920294E-08	0.698413E+06	0.761493E+06
15	0.325791E-11	-0.145915E-09	-0.231064E+08	-0.672189E+08	-0.771948E-09	0.774949E-09	0.805259E+07	0.184249E+07
16	0.482092E-11	-0.132328E-10	-0.423257E+09	-0.545674E+09	-0.117880E-09	0.225267E-10	0.656958E+08	-0.259852E+08
17	0.800941E-12	-0.998932E-12	-0.596787E+10	-0.393821E+10	-0.113885E-10	-0.493012E-11	0.360321E+09	-0.533263E+09
18	0.927934E-13	-0.592875E-13	-0.760231E+11	-0.199180E+11	-0.650548E-12	-0.102427E-11	-0.268215E+08	-0.622133E+10
19	0.870304E-14	-0.216144E-14	-0.911585E+12	0.641338E+11	0.334378E-14	-0.112473E-12	-0.360030E+11	-0.524346E+11
20	0.692479E-15	0.567491E-16	-0.108894E+14	0.432546E+13	0.580249E-14	-0.804948E-14	-0.638608E+12	-0.249672E+12

Z=(3 , 3)					Z=(3 , 4)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.141613E+01	-0.188973E+01	0.189677E+01	-0.142553E+01	-0.386024E+01	-0.385862E+01	0.386038E+01	-0.386345E+01
1	0.134579E+01	-0.150446E+01	0.149469E+01	0.133601E+01	0.277977E+01	-0.370885E+01	0.370533E+01	0.277734E+01
2	0.133681E+01	0.464691E+00	-0.481424E+00	0.134619E+01	0.308071E+01	0.118914E+01	-0.119333E+01	0.308474E+01
3	0.155384E+00	0.777520E+00	-0.774044E+00	0.187004E+00	0.199690E-01	0.195776E+01	-0.195355E+01	0.281674E-01
4	-0.548307E+00	0.261341E+00	-0.293456E+00	-0.224972E+00	-0.871243E+00	0.433015E+00	-0.416098E+00	-0.873102E+00
5	-0.135532E+00	-0.131467E-01	0.131401E+00	-0.219277E+00	-0.337370E+00	-0.235516E+00	0.246894E+00	-0.371937E+00
6	-0.248209E-01	-0.364179E-01	0.423507E-01	-0.417939E+00	0.114063E-01	-0.159125E+00	0.873896E-01	-0.523882E-01
7	0.314815E-02	-0.119802E-01	-0.945176E+00	-0.778017E+00	0.429037E-01	-0.224042E-01	-0.219534E+00	0.108441E+00
8	0.274077E-02	-0.140292E-02	-0.435633E+01	0.835836E+00	0.120501E-01	0.682873E-02	-0.222292E+00	0.774463E+00
9	0.642495E-03	0.239744E-03	-0.901257E+01	0.154722E+02	0.252730E-03	0.355851E-02	0.187260E+01	0.207610E+01
10	0.527063E-04	0.127833E-03	0.248057E+02	0.756992E+02	-0.656028E-03	0.516371E-03	0.103032E+02	-0.173365E+01
11	-0.105158E-04	0.232006E-04	0.364280E+03	0.166155E+03	-0.170912E-03	-0.530010E-04	0.195263E+02	-0.427435E+02
12	-0.408110E-05	0.141259E-05	0.280053E+04	-0.836178E+03	-0.107325E-04	-0.236991E-04	-0.114207E+03	-0.188095E+03
13	-0.605007E-06	-0.310210E-06	0.452051E+04	-0.120191E+05	0.891789E-05	-0.516636E-05	-0.111453E+04	-0.647152E+02
14	-0.283783E-07	-0.950051E-07	-0.357521E+05	-0.735920E+05	0.110775E-05	0.348042E-07	-0.377643E+04	0.479317E+04
15	0.565362E-08	-0.118201E-07	-0.580017E+06	-0.179874E+06	0.985772E-07	0.147514E-06	0.102129E+05	0.342676E+05
16	0.168599E-08	-0.443293E-09	-0.366102E+07	0.194467E+07	-0.937274E-08	0.250665E-07	0.211736E+06	0.720264E+05
17	0.180764E-09	0.169012E-09	-0.857691E+07	0.306721E+08	-0.365832E-08	0.999445E-09	0.120856E+07	-0.867007E+06
18	0.553914E-11	0.285773E-10	0.132490E+09	0.227008E+09	-0.397428E-09	-0.319442E-09	0.897590E+04	-0.194814E+08
19	-0.141241E-11	0.222358E-11	0.222548E+10	0.552190E+09	0.314501E-11	-0.649912E-10	-0.632185E+08	-0.457235E+08
20	-0.266001E-12	0.566263E-13	0.179224E+11	-0.111034E+11	0.660217E-11	-0.434152E-11	-0.581186E+09	0.190979E+09

Z=(3 , 5)					Z=(3 , 6)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.987699E+01	-0.892187E+01	0.802234E+01	-0.988905E+01	-0.247282E+02	-0.171084E+02	0.171086E+02	-0.247285E+02
1	0.597098E+01	-0.913507E+01	0.913389E+01	0.597037E+01	0.131789E+02	-0.225720E+02	0.225716E+02	0.131787E+02
2	0.742936E+01	0.296953E+01	-0.297056E+01	0.743079E+01	0.183352E+02	0.732249E+01	-0.732275E+01	0.183356E+02
3	-0.509839E+00	0.498240E+01	-0.498062E+01	-0.507044E+00	-0.218551E+01	0.127894E+02	-0.127888E+02	-0.218503E+01
4	-0.261588E+01	0.632666E+00	-0.628485E+00	-0.261734E+01	-0.741830E+01	0.685709E+00	-0.684709E+00	-0.741913E+01
5	-0.729084E+00	-0.101853E+01	0.101740E+01	-0.738816E+00	-0.144262E+01	-0.347602E+01	0.347500E+01	-0.144480E+01
6	0.239481E+00	-0.440866E+00	0.420817E+00	0.254466E+00	0.126222E+01	-0.111695E+01	0.111401E+01	0.126294E+01
7	0.184492E+00	0.167665E-01	-0.482186E-01	0.226200E+00	0.597026E+00	0.318408E+00	-0.320443E+00	0.608396E+00
8	0.216777E-01	0.560363E-01	0.143358E-01	0.151282E+00	-0.283801E-01	0.243308E+00	-0.217658E+00	-0.136527E-01
9	-0.117593E-01	0.131719E-01	0.447928E+00	-0.351164E-01	-0.776909E-01	0.216698E-01	0.428179E-01	-0.130511E+00
10	-0.458811E-02	-0.114716E-02	0.638484E+00	-0.146172E+01	-0.151316E-01	-0.190430E-01	-0.587389E-01	-0.260133E+00
11	-0.284689E-03	-0.112822E-02	-0.377899E+01	-0.464515E+01	0.318640E-02	-0.596137E-02	-0.833418E+00	-0.692207E-01
12	0.194326E-03	-0.179595E-03	-0.240191E+02	0.481666E+01	0.173389E-02	0.130541E-03	-0.146212E+01	0.277114E+01
13	0.530721E-04	0.176179E-04	-0.314961E+02	0.103576E+03	0.141883E-03	0.392639E-03	0.765370E+01	0.956152E+01
14	0.206423E-05	0.108399E-04	0.360241E+03	0.366995E+03	-0.670016E-04	0.654314E-04	0.496603E+02	-0.131137E+02
15	-0.156096E-05	0.131623E-05	0.251842E+04	-0.700822E+03	-0.184179E-04	-0.706562E-05	0.376497E+02	-0.226934E+03
16	-0.383454E-06	-0.123588E-06	0.333345E+04	-0.137650E+05	-0.266562E-06	-0.390650E-05	-0.909847E+03	-0.611503E+03
17	-0.950584E-08	-0.577093E-07	-0.596128E+05	-0.555566E+05	0.642807E-06	-0.355816E-06	-0.472992E+04	0.288495E+04
18	0.766457E-08	-0.575448E-08	-0.473385E+06	0.149024E+06	0.105970E-06	0.764984E-07	0.333647E+04	0.294160E+05
19	0.125947E-08	0.481381E-09	-0.674984E+06	0.311784E+07	-0.402337E-08	0.217290E-07	0.158079E+06	0.532147E+05
20	0.800341E-10	0.187383E-09	0.160324E+08	0.144513E+08	-0.343933E-08	0.918639E-09	0.684385E+06	-0.713069E+06

Z=(3 , 7)					Z=(3 , 8)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.615115E+02	-0.374161E-02	0.374162E+02	-0.615116E+02	-0.153062E+03	-0.836901E+02	0.836901E+02	-0.153062E+03
1	0.297158E+02	-0.360281E-02	0.360230E+02	0.297188E+02	0.682284E+02	-0.139727E+03	0.139727E+03	0.682284E+02
2	0.458338E+02	0.179626E+02	-0.179627E+02	0.458390E+02	0.115536E+03	0.440322E+02	-0.440323E+02	0.115536E+03
3	-0.702442E+01	0.330078E+02	-0.330071E+02	-0.702429E+01	-0.203610E+02	0.854676E+02	-0.854675E+02	-0.203609E+02
4	-0.204966E+02	-0.778051E-01	0.775466E-01	-0.204969E+02	-0.558287E+02	-0.382631E+01	0.382638E+01	-0.558283E+02
5	-0.260109E+01	-0.107797E+02	0.107798E+02	-0.260161E+01	-0.406192E+01	-0.318189E+02	0.318187E+02	-0.406204E+01
6	0.470576E+01	-0.260278E+01	0.260163E+01	0.470628E+01	0.156355E+02	-0.566100E+01	0.566072E+01	0.156357E+02
7	0.168163E+01	0.164036E+01	-0.164591E+01	0.168432E+01	0.435016E+01	0.651922E+01	-0.651894E+01	0.435078E+01
8	-0.420561E+00	0.835796E+00	-0.829436E+00	-0.419812E+00	-0.223740E+01	0.252874E+01	-0.252728E+01	-0.223767E+01
9	-0.336616E+00	-0.485616E-01	0.552444E-01	-0.351687E+00	-0.120221E+01	-0.584261E+00	0.584493E+00	-0.120573E+01
10	-0.216075E-01	-0.111625E+00	0.772724E-01	-0.524932E-01	0.821467E-01	-0.481719E+00	0.473091E+00	0.791816E-01
11	0.302084E-01	-0.179225E-01	-0.104654E+00	0.983234E-01	0.164485E+00	-0.205191E-01	0.601723E-02	0.185311E+00
12	0.782468E-02	0.637936E-02	0.729029E-01	0.459730E+00	0.216062E-01	0.477311E-01	-0.318245E-03	0.803089E-01
13	-0.865714E-03	0.256406E-02	0.158574E+01	0.275690E+00	-0.115169E-01	0.103629E-01	0.215050E+00	-0.101416E+00
14	-0.679401E-03	0.254789E-04	0.304604E+01	-0.524205E+01	-0.372250E-02	-0.215525E-02	-0.611463E-01	-0.829652E+00
15	-0.633663E-04	-0.147634E-03	-0.153729E+02	-0.127789E+02	0.230940E-03	-0.110105E-02	-0.292462E+01	-0.693018E+00
16	0.253829E-04	-0.251183E-05	-0.979485E+02	0.525467E+02	0.276171E-03	-0.320196E-04	-0.601911E+01	0.968247E+01
17	0.690464E-05	0.307067E-05	-0.217912E+03	0.464609E+03	0.277956E-04	0.588678E-04	0.305011E+02	0.358630E+02
18	-0.613698E-07	0.151165E-07	0.202107E+04	0.900505E+03	-0.103963E-04	0.100791E-04	0.187447E+03	-0.752891E+02
19	-0.271638E-06	0.960499E-07	0.791692E+04	-0.776636E+04	-0.270483E-05	-0.138729E-05	-0.507605E+02	-0.910404E+03
20	-0.845927E-07	-0.392521E-07	-0.226133E+05	-0.538030E+05	0.838101E-07	-0.613984E-06	-0.415984E+04	-0.116690E+04

Z=(3 , 9)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.[illegible]E+03	-0.190[illegible]E-03	0.1[illegible]E+03	-0.[illegible]E+03
1	0.159053E+03	-0.350200E-03	0.350200E+03	0.159053E+03
2	0.292837E+03	0.102[illegible]E-03	-0.[illegible]E+03	0.292387E+03
3	-0.561609E+02	0.221780E-03	-0.221[illegible]E+03	-0.[illegible]E+02
4	-0.[illegible]E+03	-0.17072[illegible]E+02	0.170.26E+02	-0.[illegible]E+03
5	-0.442056E+01	-0.912290E+02	0.912289E+02	-0.442059E+01
6	0.487743E+02	-0.[illegible]E+02	0.[illegible]E+02	0.487743E+02
7	0.105861E+02	0.[illegible]E-02	-0.[illegible]E+02	0.105862E+02
8	-0.923267E+01	0.70[illegible]E+01	-0.[illegible]E+01	-0.923282E+01
9	-0.[illegible]E+01	-0.314034E+01	0.314027E+01	-0.382946E+01
10	0.[illegible]E+00	-0.[illegible]E+01	0.[illegible]E+01	0.[illegible]E+00
11	0.[illegible]E+00	0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00
12	0.168467E-01	0.246925E+00	-0.[illegible]E+00	0.[illegible]E-01
13	-0.[illegible]E-01	0.[illegible]E-01	0.201989E-02	-0.[illegible]E+00
14	-0.[illegible]E-01	-0.198648E-01	-0.469016E-01	-0.[illegible]E+00
15	0.[illegible]E-02	-0.[illegible]E-02	-0.[illegible]E+00	0.[illegible]E+00
16	0.[illegible]E-02	0.735989E-03	0.[illegible]E-02	0.[illegible]E+01
17	-0.[illegible]E-04	0.[illegible]E-03	0.[illegible]E+01	0.[illegible]E+01
18	-0.[illegible]E-03	0.[illegible]E-04	0.[illegible]E+02	-0.[illegible]E+02
19	-0.[illegible]E-03	-0.[illegible]E-05	-0.[illegible]E+02	0.[illegible]E-04
20	0.[illegible]E-05	-0.[illegible]E-05	-0.[illegible]E+03	0.[illegible]E+03

Z=(3 , 10)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.[illegible]E+03	-0.442669E+03	0.442669E+03	-0.957501E+03
1	0.[illegible]E+03	-0.[illegible]E+03	0.[illegible]E+03	0.375704E+03
2	0.[illegible]E+03	-0.266452E+03	0.266452E+03	0.745814E+03
3	-0.[illegible]E+03	0.[illegible]E+03	-0.576392E+03	-0.150843E+03
4	-0.[illegible]E+03	-0.[illegible]E+02	0.585319E+02	-0.404716E+03
5	0.[illegible]E+01	-0.[illegible]E+03	0.256721E+03	0.226357E+01
6	-0.[illegible]E+03	-0.[illegible]E+02	0.214753E+02	0.146325E+03
7	0.[illegible]E+02	-0.[illegible]E+02	0.745216E+02	0.244784E+02
8	-0.[illegible]E+02	-0.[illegible]E+02	-0.105552E+02	-0.336665E+02
9	-0.[illegible]E+02	-0.[illegible]E+02	0.133324E+02	-0.112913E+02
10	0.[illegible]E+00	-0.[illegible]E+01	0.584523E+01	0.452186E+01
11	0.[illegible]E+00	0.[illegible]E+01	-0.124213E+01	0.264336E+01
12	0.[illegible]E+01	-0.[illegible]E+00	0.105379E+01	-0.227525E+00
13	-0.[illegible]E+00	0.[illegible]E+00	0.790483E-02	-0.479785E-02
14	-0.[illegible]E+00	-0.[illegible]E+00	0.101591E+00	-0.451803E-01
15	0.[illegible]E-01	-0.[illegible]E-01	-0.343201E-01	0.766169E-01
16	0.[illegible]E-02	0.[illegible]E-02	0.[illegible]E-01	0.[illegible]E+00
17	-0.[illegible]E-02	0.[illegible]E-02	0.[illegible]E+00	-0.[illegible]E+00
18	-0.[illegible]E-03	0.[illegible]E-03	0.[illegible]E+00	0.[illegible]E+00
19	-0.[illegible]E-03	-0.[illegible]E-03	-0.[illegible]E+01	-0.[illegible]E+01
20	0.[illegible]E-04	-0.[illegible]E-04	0.[illegible]E+01	-0.[illegible]E+02

Z=(4 , 1)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00	-0.[illegible]E+00
1	0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00	-0.[illegible]E+00
2	0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00	0.[illegible]E+00
3	0.[illegible]E+00	0.[illegible]E-01	-0.[illegible]E+00	0.[illegible]E+00
4	0.[illegible]E+00	0.[illegible]E-01	-0.[illegible]E+00	0.[illegible]E+00
5	0.[illegible]E-01	0.[illegible]E-01	-0.[illegible]E+00	0.[illegible]E+00
6	0.[illegible]E-02	0.[illegible]E-03	-0.[illegible]E+00	0.[illegible]E+01
7	0.[illegible]E-03	0.[illegible]E-02	0.[illegible]E+00	0.[illegible]E+01
8	-0.[illegible]E-03	0.[illegible]E-02	0.[illegible]E+01	-0.[illegible]E+01
9	-0.[illegible]E-03	0.[illegible]E-03	0.[illegible]E+02	-0.[illegible]E+02
10	-0.[illegible]E-04	0.[illegible]E-03	0.[illegible]E+02	-0.[illegible]E+02
11	-0.[illegible]E-04	0.[illegible]E-03	0.[illegible]E+03	-0.[illegible]E+03
12	-0.[illegible]E-05	0.[illegible]E-06	0.[illegible]E+03	-0.[illegible]E+04
13	-0.[illegible]E-06	0.[illegible]E-07	0.[illegible]E+04	-0.[illegible]E+04
14	-0.[illegible]E-07	-0.[illegible]E-08	0.[illegible]E+05	-0.[illegible]E+05
15	-0.[illegible]E-08	-0.[illegible]E-08	0.[illegible]E+06	-0.[illegible]E+05
16	-0.[illegible]E-09	-0.[illegible]E-09	0.[illegible]E+07	-0.[illegible]E+07
17	-0.[illegible]E-10	-0.[illegible]E-10	0.[illegible]E+08	-0.[illegible]E+08
18	-0.[illegible]E-11	-0.[illegible]E-10	0.[illegible]E+08	-0.[illegible]E+09
19	-0.[illegible]E-12	-0.[illegible]E-11	-0.[illegible]E+09	-0.[illegible]E+10
20	0.[illegible]E-13	-0.[illegible]E-12	-0.[illegible]E+11	-0.[illegible]E+11

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.[illegible]E+00	-0.189411E+00	0.217345E+00	-0.794877E+00
1	0.[illegible]E+00	-0.[illegible]E+00	0.770497E+00	0.870101E-02
2	0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00	0.566949E+00
3	0.[illegible]E+00	0.[illegible]E+00	0.177552E+00	-0.238459E+00
4	0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00	0.[illegible]E+00
5	0.[illegible]E-01	0.[illegible]E+00	0.109754E+00	-0.700013E-01
6	0.[illegible]E-02	-0.[illegible]E-01	0.318554E-01	0.328756E+00
7	0.[illegible]E-03	0.[illegible]E-02	0.[illegible]E-02	0.[illegible]E+01
8	-0.[illegible]E-03	0.[illegible]E+01	0.[illegible]E+01	-0.[illegible]E+01
9	-0.[illegible]E-03	0.[illegible]E-03	0.[illegible]E+01	-0.[illegible]E+02
10	-0.[illegible]E-04	0.[illegible]E-03	0.[illegible]E+02	-0.[illegible]E+02
11	-0.[illegible]E-04	0.[illegible]E-03	0.[illegible]E+03	-0.[illegible]E+03
12	-0.[illegible]E-05	0.[illegible]E-06	0.[illegible]E+03	-0.[illegible]E+04
13	-0.[illegible]E-06	0.[illegible]E-07	0.[illegible]E+04	-0.[illegible]E+04
14	-0.[illegible]E-07	-0.[illegible]E-08	0.[illegible]E+05	-0.[illegible]E+05
15	-0.[illegible]E-08	-0.[illegible]E-08	0.[illegible]E+06	-0.[illegible]E+05
16	-0.[illegible]E-09	-0.[illegible]E-09	0.[illegible]E+07	-0.[illegible]E+07
17	-0.[illegible]E-10	-0.[illegible]E-10	0.[illegible]E+08	-0.[illegible]E+08
18	-0.[illegible]E-11	-0.[illegible]E-10	0.[illegible]E+08	-0.[illegible]E+09
19	-0.[illegible]E-12	-0.[illegible]E-11	-0.[illegible]E+09	-0.[illegible]E+10
20	0.[illegible]E-13	-0.[illegible]E-12	-0.[illegible]E+11	-0.[illegible]E+11

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
	Z=(-4 , 3)				Z=(-4 , 4)			
0	-0.280465E+01	-0.[illegible]	0.143120E+00	-0.[illegible]E+01	-0.[illegible]E+01	0.[illegible]E+00	-0.350403E+00	-0.481287E+01
1	-0.193664E+00	-0.[illegible]E+01	0.178742E+01	-0.[illegible]E+00	-0.[illegible]E+00	-0.416702E+01	0.416769E+01	-0.911440E+00
2	0.126984E+01	-0.65296[illegible]	0.641324E+00	0.126123E+01	0.291[illegible]E+01	-0.157583E+01	0.157150E+01	0.290819E+01
3	0.617755E+00	0.499215[illegible]	-0.517626E+00	0.828409E+00	0.17+[illegible]E+01	0.[illegible]6636E+01	-0.136789E+01	0.174687E+01
4	0.653[illegible]E-01	0.525171E+00	-0.[illegible]25201E+00	0.101393E+00	-0.193[illegible]E+00	0.124477E+01	-0.123989E+01	-0.182775E+00
5	-0.156[illegible]1E+00	0.186412[illegible]	-0.129160E+00	-0.115185E+00	-0.558568E+00	0.254228E+00	-0.232606E+00	-0.557623E+00
6	-0.946[illegible]E-01	0.937604E-02	0.145[illegible]6E+00	-0.133625[illegible]	-0.225380E+00	-0.127178E+00	0.153321E+00	-0.264124E+00
7	-0.257[illegible]E-01	-0.193211E-01	0.224[illegible]E+00	-0.390266[illegible]	-0.143[illegible]E-01	-0.946496E-01	0.325519E-01	-0.120725E+00
8	-0.196[illegible]E-02	-0.[illegible]0170E-02	-0.[illegible]0621E+00	-0.120628[illegible]	0.210276E-01	-0.234037E-01	-0.281146E+00	-0.607706E-01
9	0.122758[illegible]-02	-0.224689E-02	-0.35[illegible]E+01	-0.225715E+01	0.928621E-02	0.237016E-03	-0.779124E+00	0.589022E+00
10	0.[illegible]E-03	-0.[illegible]E-03	-0.155[illegible]E+02	0.239[illegible]E+01	0.159191E-02	0.191186E-02	-0.170346E+00	0.331012E+01
11	0.128[illegible]E-03	0.413668E-04	-0.[illegible]E+02	0.495[illegible]E+02	-0.888225E-04	0.602852E-03	0.902103E+01	0.854720E+01
12	0.[illegible]E-04	0.[illegible]-04	-0.504951E+01	0.297621E+03	-0.114074E-02	0.767060E-04	0.506790E+02	-0.467238E+01
13	-0.[illegible]E-05	0.507218E-05	0.916007E+03	0.115691E+04	-0.279514E-04	-0.666594E-05	0.134750E+03	-0.181520E+03
14	-0.[illegible]E-06	0.[illegible]E-06	0.771059E+04	0.173216E+04	-0.275993E-05	-0.486747E-05	-0.208530E+03	-0.106274E+04
15	-0.142168E-06	0.197[illegible]E-07	0.[illegible]E+05	-0.199525E+05	0.302100E-06	-0.973903E-06	-0.474310E+04	-0.291499E+04
16	-0.189[illegible]E-07	-0.109[illegible]E-07	0.[illegible]E+06	-0.252804E+06	0.156692E-06	-0.770418E-07	-0.294665E+05	0.814667E+04
17	-0.117[illegible]E-08	-0.291[illegible]E-08	-0.[illegible]E+06	0.179352E+07	0.26[illegible]E-07	0.975071E-08	-0.832014E+05	0.138069E+06
18	0.117[illegible]E-09	-0.[illegible]E-09	-0.[illegible]E-07	-0.[illegible]E+07	0.171781E-08	0.395069E-08	0.357014E+06	0.104741E+07
19	0.442[illegible]E-10	-0.[illegible]E-10	-0.[illegible]E+08	-0.210779E+07	-0.[illegible]E-09	0.576366E-09	0.657868E+07	0.303503E+07
20	0.[illegible]E-11	0.[illegible]E-12	-0.[illegible]E+09	0.[illegible]E+09	-0.[illegible]E-10	0.[illegible]E-10	0.465098E+08	-0.[illegible]E+08
	Z=(-4 , 5)				Z=(-4 , 6)			
0	-0.[illegible]	0.[illegible]E+01	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]
1	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
2	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
3	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
4	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]
5	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
6	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
7	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
8	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
9	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
10	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
11	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
12	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
13	-0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
14	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
15	-0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
16	-0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
17	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
18	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
19	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
20	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]

Z=(4 , 7)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.641[illegible]E+02	0.22[illegible]E+02	-0.2[illegible]E+02	[illegible]
1	-0.241424E+02	-0.558[illegible]E+02	0.5[illegible]E+02	0.21[illegible]
2	0.416879E+02	-0.25141[illegible]E+02	0.25[illegible]E+02	0.[illegible]16879E+02
3	0.234165E+02	0.2567[illegible]E+02	-0.256701E+02	0.2341[illegible]E+02
4	-0.121986E+02	0.18559[illegible]E+02	-0.1[illegible]E+02	-0.12198[illegible]E+02
5	-0.12190[illegible]E+02	-0.355577E+01	0.355606E+01	-0.1219[illegible]E+02
6	-0.806206E+00	-0.653644E+01	0.653582E+01	-0.[illegible]E+00
7	0.279446E+01	-0.121470E+01	0.1[illegible]1235E+01	0.279316E+01
8	0.923509E+00	0.991053E+00	-0.991009E+00	0.927897E+00
9	-0.175718E+00	0.466626E+00	-0.156076E+00	-0.174902E+00
10	-0.177678E+00	0.102242E-01	0.917256E-02	-0.197965E+00
11	-0.277679E-01	-0.515997E-01	0.288176E-01	-0.101678E+00
12	0.105621E-01	-0.144786E-01	-0.231537E+00	0.219981E-02
13	0.808[illegible]E-02	0.[illegible]8307E-03	-0.370353E+00	0.728962E+00
14	0.[illegible]E-03	0.131072E-02	0.173571E+01	0.228553E+01
15	-0.249[illegible]E-03	0.[illegible]6070E-03	0.106058E+02	-0.207090E+01
16	-0.7[illegible]E-04	-0.276532[illegible]	0.11[illegible]33E+02	-0.416488E+02
17	-0.255250E-05	-0.18079[illegible]E-04	-0.135077E+03	-0.123662E+03
18	0.315407E-05	-0.226651E-05	-0.768629E+03	0.284429E+03
19	0.708578E-06	0.[illegible]E-06	-0.1[illegible]E+03	0.383398E+04
20	0.415816E-08	0.151480E-06	0.157153E+05	0.109402E+05

Z=([illegible] , [illegible]8)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	[illegible]	0.648277E+02	-0.640877E+02	-0.153824E+03
1	[illegible]	-0.135237E+03	0.135237E+03	-0.653702E+02
2	0.1034[illegible]7E+0[illegible]	-0.647623E+02	0.647622E+02	0.103447E+03
3	0.58350[illegible]E+02	0.673231E+02	-0.673231E+02	0.583509E+02
4	-0.357205E+02	0.471298E+02	-0.471297E+02	-0.357234E+02
5	-0.3250[illegible]6E+02	-0.139635E+02	0.139636E+02	-0.325097E+02
6	0.245831E+01	-0.190492E+02	0.190490E+02	0.248314E+01
7	0.935982E+01	-0.164673E+01	0.164631E+01	0.936015E+01
8	0.206646E+01	0.377439E+01	-0.377400E+01	0.206750E+01
9	-0.118687E+01	0.134199E+01	-0.133947E+01	-0.118698E+01
10	-0.644196E+00	-0.244456E+00	0.246247E+00	-0.650137E+00
11	-0.2897[illegible]E-02	-0.245859E+00	0.282740E+00	-0.127852E-01
12	0.753833E-01	-0.316180E-01	-0.800250E-02	0.100132E+00
13	0.180876E-01	0.178657E-01	0.758791E-02	0.157957E+00
14	-0.273271E-02	0.690021E-02	0.444780E+00	0.926221E-01
15	-0.208941E-02	0.644682E-04	0.905874E+00	-0.131337E+01
16	-0.228526E-03	-0.478113E-03	-0.311207E+01	-0.493656E+01
17	0.845673E-0[illegible]	-0.992194E-04	-0.223314E+02	0.343790E+01
18	0.292510E-04	0.849873E-05	-0.239353E+02	0.891129E+02
19	0.9738[illegible]E-05	0.670391E-05	0.307769E+03	0.249982E+03
20	-0.120672E-05	0.780793E-06	0.159901E+04	-0.801947E+03

Z=([illegible] , 9)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.372157E+03	0.17[illegible]E+03	-0.1[illegible]E+03	-0.372157E+03
1	-0.174370E+03	-0.330399E+03	0.[illegible]30399E+03	-0.174370E+03
2	0.258619E+03	-0.167626E+03	0.167626E+03	0.258619E+03
3	0.149930E+03	0.175859E+03	-0.175859E+03	0.149930E+03
4	-0.101123E+03	0.121012E+03	-0.121012E+03	-0.101123E+03
5	-0.864082E+02	-0.465047E+02	0.465047E+02	-0.864083E+02
6	0.1446[illegible]E+02	-0.539171E+02	0.539170E+02	0.144635E+02
7	0.291279E+02	0.154942E+00	-0.1[illegible]935E+00	0.291230E+02
8	0.376952E+01	0.134742E+02	-0.134740E+02	0.376955E+01
9	-0.523234E+01	0.334547E+01	-0.33[illegible]488E+01	-0.523257E+01
10	-0.197126E+01	-0.162397E+01	0.162886E+01	-0.197264E+01
11	0.[illegible]E+00	-0.910324E+00	0.911844E+00	0.[illegible]E+00
12	[illegible]	0.11[illegible]E-01	-0.156683E-01	0.8[illegible]E+00
13	[illegible]	0.113396E+00	-0.950762E-01	0.56[illegible]E-01
14	[illegible]	0.230112E-01	0.32[illegible]E-01	-0.57[illegible]E-01
15	[illegible]	-0.[illegible]E-02	0.2[illegible]E-02	-0.2[illegible]E+00
16	[illegible]	[illegible]	-0.317661E+00	-0.29[illegible]
17	[illegible]	-0.1[illegible]E-03	-0.203499E+01	0.26[illegible]E+01
18	[illegible]	0.18[illegible]E-05	[illegible]E+01	0.102[illegible]E+02
19	[illegible]	0.416173E-04	[illegible]E+02	-0.611868E+01
20	[illegible]	[illegible]E-05	0.[illegible]E+02	-0.185527E+03

Z=(4 , 10)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.90[illegible]E+03	0.470289E+03	-0.470289E+03	-0.907988E+03
1	-0.461057E+03	-0.813497E+03	0.813497E+03	-0.461057E+03
2	0.649906E+03	-0.435205E+03	0.435205E+03	0.649906E+03
3	0.385521E+03	0.458330E+03	-0.458330E+03	0.385521E+03
4	-0.280271E+03	0.313194E+03	-0.313194E+03	-0.280271E+03
5	-0.229506E+03	-0.143680E+03	0.143680E+03	-0.229506E+03
6	0.569686E+02	-0.150058E+03	0.150058E+03	0.569686E+02
7	0.868752E+02	0.125683E+02	-0.125680E+02	0.868752E+02
8	0.421887E+01	0.442204E+02	-0.442203E+02	0.421892E+01
9	-0.195963E+02	0.717124E+01	-0.717110E+01	-0.195964E+02
10	-0.53115[illegible]E+01	-0.742458E+01	0.742445E+01	-0.531217E+01
11	0.230876E+01	-0.293138E+01	0.293057E+01	0.230885E+01
12	0.133071E+01	0.521970E+00	-0.522309E+00	0.133272E+01
13	-0.366627E-01	0.513440E+00	-0.508583E+00	-0.342864E-01
14	-0.169772E+00	0.413961E-01	-0.310036E-01	-0.180875E+00
15	-0.296138E-01	-0.476136E-01	0.253920E-01	-0.690790E-01
16	0.108071E-01	-0.131396E-01	-0.126461E+00	0.391739E-01
17	0.45[illegible]E-02	0.174652E-02	-0.578527E-01	0.473415E+00
18	-0.398645E-04	0.135352E-02	0.148505E+01	0.706745E+00
19	-0.338464E-05	0.107542E-03	0.420684E+01	-0.430849E+01
20	-0.387491E-04	-0.709554E-04	-0.103130E+02	-0.206446E+02

Z=(5 , 1)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.[illegible]E+00	[illegible]	-0.[illegible]E+00	-0.199[illegible]E+00
1	-0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00	-0.[illegible]E+00
2	0.[illegible]E+00	-0.[illegible]E+00	0.[illegible]E+00	0.[illegible]E+00
3	0.283004E+00	-0.329918E-01	0.147917E-01	0.186769E+00
4	0.215410E+00	0.503562E-01	-0.177678E+00	0.164359E+00
5	0.197252E+00	0.646819E-01	-0.265417E+00	0.159201E+00
6	0.388344E-01	0.410952E-01	-0.316428E+00	0.284706E+00
7	0.103820E-01	0.186390E-01	-0.383299E+00	0.710777E+00
8	0.186688E-02	0.668143E-02	-0.379179E+00	0.198675E+01
9	0.898887E-04	0.198350E-02	0.442790E+00	0.603228E+01
10	-0.839577E-04	0.300281E-03	0.640494E+01	0.197508E+02
11	-0.450675E-04	0.108720E-03	0.413598E+02	0.684764E+02
12	-0.142039E-04	0.204635E-04	0.237108E+03	0.246558E+03
13	-0.354428E-05	0.331966E-05	0.133566E+04	0.888911E+03
14	-0.751295E-06	0.453720E-06	0.762113E+04	0.298191E+04
15	-0.139648E-06	0.486823E-07	0.444923E+05	0.724049E+04
16	-0.231488E-07	0.299956E-08	0.266257E+06	-0.123666E+05
17	-0.345549E-08	-0.265485E-09	0.162088E+07	-0.426836E+06
18	-0.466678E-09	-0.154875E-09	0.101228E+08	-0.505289E+07
19	-0.570447E-10	-0.[illegible]E-10	0.632963E+08	-0.499318E+08
20	-0.[illegible]E-11	-0.[illegible]E-11	0.389043E+09	-0.461244E+09

Z=(5 , 2)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.551039E+00	0.[illegible]E+00	-0.423853E+00	-0.526036E+00
1	-0.[illegible]E+00	-0.414552E+00	0.441702E+00	-0.187649E+00
2	0.[illegible]E+00	-0.539338E+00	0.351427E+00	0.182417E+00
3	0.486350E+00	-0.123537E+00	0.963681E-01	0.454758E+00
4	0.315221E+00	0.155451E+00	-0.215341E+00	0.319809E+00
5	0.992725E-01	0.169100E+00	-0.232215E+00	0.175158E+00
6	0.133780E-02	0.899463E-01	-0.921891E-01	0.188550E+00
7	-0.156825E-01	0.313040E-01	0.194629E+00	0.330107E+00
8	-0.938824E-02	0.718386E-02	0.937031E+00	0.463833E+00
9	-0.[illegible]E-02	0.753195E-03	0.309565E+01	-0.691832E-01
10	-0.923821E-03	-0.198394E-03	0.911322E+01	-0.474683E+01
11	-0.185278E-03	-0.135831E-03	0.230258E+02	-0.303161E+02
12	-0.256432E-04	-0.440720E-04	0.341083E+02	-0.151996E+03
13	-0.123951E-05	-0.103724E-04	-0.138069E+03	-0.683646E+03
14	0.558093E-06	-0.190540E-05	-0.194984E+04	-0.277340E+04
15	0.223181E-06	-0.272330E-06	-0.151579E+05	-0.928367E+04
16	0.517503E-07	-0.273066E-07	-0.989144E+05	-0.144397E+05
17	0.914405E-08	-0.811984E-09	-0.580494E+06	0.152243E+06
18	0.128849E-08	0.407195E-09	-0.303658E+07	0.233434E+07
19	0.144650E-09	0.121734E-09	-0.[illegible]E+08	0.224877E+08
20	0.115815E-10	0.[illegible]E-10	-0.227733E+08	0.183396E+09

Z=(5 , 3)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.[illegible]E+01	0.[illegible]E+01	-0.[illegible]E+01	-0.[illegible]E+01
1	-0.[illegible]E+01	-0.[illegible]E+00	0.[illegible]E+00	-0.[illegible]E+01
2	0.[illegible]E+00	-0.[illegible]E+01	0.[illegible]E+01	0.[illegible]E+00
3	0.[illegible]E+01	-0.[illegible]E+00	0.[illegible]E+00	0.[illegible]E+01
4	0.[illegible]E+00	0.[illegible]E+00	-0.447595E+00	0.550556E+00
5	0.412896E-01	0.[illegible]E+00	-0.384745E+00	0.797302E-01
6	-0.[illegible]E+00	0.147387E+00	-0.974011E-01	-0.481319E-01
7	-0.[illegible]E-01	0.[illegible]E-01	0.148327E+00	-0.[illegible]E-01
8	-0.[illegible]E-01	-0.[illegible]E-02	0.384122E+00	-0.273967E+00
9	-0.458643E-02	-0.[illegible]E-02	0.281027E+00	-0.[illegible]E+01
10	0.515821E-04	-0.[illegible]E-02	-0.[illegible]E+01	-0.[illegible]E+01
11	0.[illegible]E-03	-0.[illegible]E-03	-0.[illegible]E+02	-0.[illegible]E+01
12	0.[illegible]E-03	-0.[illegible]E-04	-0.[illegible]E+02	0.[illegible]E+01
13	0.[illegible]E-03	0.[illegible]E-03	-0.160836E+03	0.[illegible]E+03
14	0.[illegible]E-04	0.[illegible]E-03	-0.[illegible]E+03	0.[illegible]E+03
15	0.[illegible]E-05	0.[illegible]E-05	0.[illegible]E+04	0.[illegible]E+03
16	0.[illegible]E-06	0.[illegible]E-05	0.116720E+04	0.487838E+04
17	-0.[illegible]E-07	0.[illegible]E-05	0.176631E+05	0.152079E+05
18	-0.[illegible]E-08	0.[illegible]E-07	0.133560E+06	0.209196E+05
19	-0.[illegible]E-09	0.[illegible]E-09	0.718912E+06	-0.[illegible]E+06
20	-0.[illegible]E-09	-0.[illegible]E-09	0.[illegible]E+07	-0.[illegible]E+07

Z=(5 , 5)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.501131E+01	0.922104E+01	-0.922038E+01	-0.501047E+01
1	-0.879961E+01	-0.358724E+01	0.358820E+01	-0.880003E+01
2	0.129525E+01	-0.765733E+01	0.765703E+01	0.129400E+01
3	0.561857E+01	-0.889654E+00	0.837316E+00	0.561851E+01
4	0.201611E+01	0.310199E+01	-0.310296E+01	0.201783E+01
5	-0.101291E+01	0.166697E+01	-0.166393E+01	-0.100980E+01
6	-0.107593E+01	0.658925E-01	-0.581406E-01	-0.107829E+01
7	-0.390157E+00	-0.382577E+00	0.356567E+00	-0.316397E+00
8	0.518486E-01	-0.189524E+00	0.163395E+00	0.238444E-01
9	0.661091E-01	-0.277555E-01	-0.652597E-01	0.791610E-01
10	0.210232E-01	0.111811E-01	-0.142683E+00	0.256255E+00
11	0.751936E-02	0.708712E-02	0.308761E+00	0.752608E+00
12	-0.122711E-02	0.162362E-02	0.259303E+01	0.782993E+00
13	-0.528584E-03	0.397275E-04	0.813330E+01	-0.528371E+01
14	-0.927969E-04	-0.891837E-04	0.516057E+01	-0.370089E+02
15	0.840946E-06	-0.292494E-04	-0.100667E+03	-0.116835E+03
16	0.472787E-05	-0.409355E-05	-0.679355E+03	-0.131120E+02
17	0.125319E-05	0.138733E-06	-0.218447E+04	0.231544E+04
18	0.143781E-06	0.192859E-06	0.118772E+04	0.157628E+05
19	-0.762427E-08	0.428830E-07	0.647164E+05	0.517974E+05
20	-0.627152E-08	0.411920E-08	0.453266E+06	-0.661471E+05

Z=(5 , 6)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.102269E+02	0.237159E+02	-0.237158E+02	-0.102266E+02
1	-0.222215E+02	-0.727677E+01	0.727707E+01	-0.222215E+02
2	0.261538E+01	-0.189482E+02	0.189460E+02	0.261499E+01
3	0.139744E+02	-0.177514E+01	0.177458E+01	0.139745E+02
4	0.418049E+01	0.830795E+01	-0.830806E+01	0.418132E+01
5	-0.353536E+01	0.420319E+01	-0.420198E+01	-0.353523E+01
6	-0.282084E+01	-0.692500E+00	0.694387E+00	-0.282242E+01
7	-0.355431E+00	-0.133412E+01	0.133290E+01	-0.360174E+00
8	0.415439E+00	-0.423377E+00	0.413019E+00	0.413016E+00
9	0.226399E+00	0.495011E-01	-0.667640E-01	0.245065E+00
10	0.296604E-01	0.773619E-01	-0.590046E-01	0.934156E-01
11	-0.155479E-01	0.223971E-01	0.153156E+00	0.376103E-01
12	-0.830327E-02	0.359740E-04	0.442252E+00	-0.380306E+00
13	-0.137854E-02	-0.190547E-02	-0.187078E+00	-0.190443E+01
14	0.191986E-03	-0.591952E-03	-0.591395E+01	-0.333759E+01
15	0.146382E-03	-0.492653E-04	-0.233910E+02	0.108401E+02
16	0.297482E-04	0.204250E-04	-0.204687E+02	0.102205E+03
17	0.382522E-06	0.795334E-05	0.299774E+03	0.332057E+03
18	-0.127631E-05	0.107508E-05	0.202362E+04	-0.181591E+03
19	-0.326124E-06	-0.690267E-07	0.517657E+04	-0.824744E+04
20	-0.272190E-07	-0.562128E-07	-0.171133E+05	-0.460408E+05

Z=(5 , 7)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.208137E+02	0.602465E+02	-0.602468E+02	-0.208137E+02
1	-0.559538E+02	-0.147741E+02	0.147742E+02	-0.559539E+02
2	0.527910E+01	-0.473625E+02	0.473624E+02	0.527898E+01
3	0.353361E+02	-0.372365E+01	0.372347E+01	0.353362E+02
4	0.896826E+01	0.222031E+02	-0.222031E+02	0.896853E+01
5	-0.109798E+02	0.959038E+01	-0.958996E+01	-0.109797E+02
6	-0.714976E+01	-0.365016E+01	0.365055E+01	-0.715039E+01
7	0.210909E+00	-0.400433E+01	0.400348E+01	0.209789E+00
8	0.168171E+01	-0.707542E+00	0.704707E+00	0.168240E+01
9	0.582977E+00	0.487243E+00	-0.488543E+00	0.589449E+00
10	-0.575701E-01	0.285274E+00	-0.272475E+00	-0.476153E-01
11	-0.979716E-01	0.318997E-01	0.733591E-02	-0.115744E+00
12	-0.232798E-01	-0.225451E-01	0.320532E-01	-0.148218E+00
13	0.195257E-02	-0.101999E-01	-0.303708E+00	-0.210426E+00
14	0.279048E-02	-0.104594E-02	-0.112355E+01	0.540520E+00
15	0.637945E-03	0.489571E-03	-0.416443E+00	0.435573E+01
16	-0.186072E-04	0.203664E-03	0.137896E+02	0.979123E+01
17	-0.466711E-04	0.226366E-04	0.399981E+02	-0.281232E+02
18	-0.974391E-05	-0.555956E-05	0.532214E+02	-0.263129E+03
19	-0.145661E-06	-0.242791E-05	-0.539114E+03	-0.817391E+03
20	0.492446E-06	-0.300947E-06	-0.533951E+04	0.124433E+04

Z=(5 , 8)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.422915E+02	0.152225E+03	-0.152225E+03	-0.422915E+02
1	-0.140918E+03	-0.299380E+02	0.299381E+02	-0.140918E+03
2	0.104632E+02	-0.119270E+03	0.119270E+03	0.104681E+02
3	0.902535E+02	-0.826967E+01	0.826962E+01	0.902535E+02
4	0.198214E+02	0.592295E+02	-0.592295E+02	0.198215E+02
5	-0.323154E+02	0.221819E+02	-0.221818E+02	-0.323154E+02
6	-0.178590E+02	-0.135693E+02	0.135694E+02	-0.178592E+02
7	0.341611E+01	-0.112232E+02	0.112228E+02	0.341588E+01
8	0.560534E+01	-0.494413E+00	0.493756E+00	0.560581E+01
9	0.118180E+01	0.218550E+01	-0.218509E+01	0.118348E+01
10	-0.611322E+00	0.808894E+00	-0.804929E+00	-0.610701E+00
11	-0.376131E+00	-0.772296E-01	0.826709E-01	-0.384553E+00
12	-0.343307E-01	-0.131054E+00	0.116720E+00	-0.371092E-01
13	0.334094E-01	-0.296968E-01	-0.470738E-01	0.420522E-01
14	0.129347E-01	0.492518E-02	-0.860647E-01	0.235143E+00
15	0.302751E-03	0.400344E-02	0.519812E+00	0.565394E+00
16	-0.902006E-03	0.646182E-03	0.256684E+01	-0.698934E+00
17	-0.261027E-03	-0.125401E-03	0.216369E+01	-0.947516E+01
18	-0.426672E-05	-0.715484E-04	-0.281179E+02	-0.247454E+02
19	0.141980E-04	-0.913331E-05	-0.142912E+03	0.515540E+02
20	0.335854E-05	0.176171E-05	-0.104276E+03	0.638697E+03

Z=(5 , 9)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.5568[illegible]E+02	0.381080E+03	-0.[illegible]E+03	-0.836810E+02
1	-0.355511E+03	-0.602892E+02	0.602892E+02	-0.355511E+03
2	0.290162E+02	-0.302957E+03	0.302957E+03	0.290162E+02
3	0.232000E+03	-0.194480E+02	0.194479E+02	0.232000E+03
4	0.459289E+02	0.157748E+03	-0.157748E+03	0.459289E+02
5	-0.923404E+02	0.520077E+02	-0.520077E+02	-0.923404E+02
6	-0.443680E+02	-0.445207E+02	0.445207E+02	-0.443681E+02
7	0.159926E+02	-0.303359E+02	0.303358E+02	0.159927E+02
8	0.170483E+02	0.268847E+01	-0.268861E+01	0.170485E+02
9	0.155886E+01	0.788434E+01	-0.788408E+01	0.155894E+01
10	-0.293240E+01	0.186340E+01	-0.186242E+01	-0.293255E+01
11	-0.114081E+01	-0.809983E+00	0.810252E+00	-0.114[illegible]E+01
12	0.112968E+00	-0.514342E+00	0.508990E+00	0.110165E+00
13	0.182267E+00	-0.363445E-01	0.236855E-01	0.192658E+00
14	0.358456E-01	0.502170E-01	-0.372109E-01	0.809374E-01
15	-0.958521E-02	0.167763E-01	0.124702E+00	0.970153E-02
16	-0.570529E-02	-0.456644E-03	0.245093E+00	-0.394976E+00
17	-0.575139E-03	-0.150148E-02	-0.849867E+00	-0.131125E+01
18	0.293827E-03	-0.313070E-03	-0.554480E+01	0.755731E+00
19	0.104129E-03	0.320178E-03	-0.[illegible]E+01	0.200493E+02
20	0.430483E-05	0.251742E-[illegible]	0.[illegible]E+02	0.574961E+02

Z=(5 , 10)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.172511E+03	0.969830E+03	-0.969830E+03	-0.172511E+03
1	-0.899144E+03	-0.119917E+03	0.119917E+03	-0.899144E+03
2	0.358339E+02	-0.768425E+03	0.768425E+03	0.358338E+02
3	0.598941E+03	-0.481015E+02	0.481015E+02	0.598941E+03
4	0.104933E+03	0.419550E+03	-0.419550E+03	0.104933E+03
5	-0.259089E+03	0.123588E+03	-0.123588E+03	-0.259089E+03
6	-0.110174E+03	-0.137174E+03	0.137174E+03	-0.110174E+03
7	0.591375E+02	-0.803372E+02	0.803371E+02	0.591375E+02
8	0.492521E+02	0.180063E+02	-0.180063E+02	0.492521E+02
9	0.255986E+02	-0.255985E+02	-0.115752E+01	
10	-0.115760E+01	0.320823E+01	-0.320801E+01	-0.112221E+02
11	-0.287905E+01	-0.405074E+01	0.405058E+01	-0.287962E+01
12	0.111992E+01	-0.163746E+01	0.163604E+01	0.111982E+01
13	0.724041E+00	0.173445E+00	-0.174897E+00	0.727350E+00
14	0.366889E-01	0.260853E+00	-0.253859E+00	0.434969E-01
15	-0.763019E-01	0.440270E-01	-0.186660E-01	-0.879410E-01
16	-0.221162E-01	-0.170312E-01	0.126193E-01	-0.106252E+00
17	0.214625E-02	-0.812156E-02	-0.245182E+00	-0.856268E-01
18	0.238071E-02	-0.348429E-03	-0.595629E+00	0.672884E+00
19	0.345836E-03	0.358919E-03	0.135539E+01	0.284456E+01
20	-0.973480E-04	0.141274E-03	0.115850E+02	-0.464183E+00

Z=(6 , 1)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.[illegible]E-01	0.19468[illegible]E+00	-0.[illegible]E+00	-0.102653E-01
1	-0.[illegible]E+00	0.194[illegible]E-01	-0.[illegible]E-02	-0.[illegible]E+00
2	-0.[illegible]E-01	-0.164875E+00	0.[illegible]E+00	-0.[illegible]E-01
3	0.162567E+00	-0.142[illegible]E+00	0.179625E+00	0.943700E-01
4	0.288[illegible]E+00	-0.272752E-01	-0.113246E-01	0.152290E+00
5	0.178578E+00	0.446307E-01	-0.159109E+00	0.139527E+00
6	0.936107E-01	0.534095E-01	-0.283655E+00	0.123040E+00
7	0.374295E-01	0.852722E-01	-0.288471E+00	0.221380E+00
8	0.117828E-01	0.172137E-01	-0.378285E+00	0.527400E+00
9	0.232826E-02	0.379138E-02	-0.512045E+00	0.140634E+01
10	0.456696E-03	0.226113E-02	-0.477196E+00	0.403859E+01
11	0.[illegible]E-03	0.[illegible]E-03	0.119620E+01	0.127197E+02
12	-0.[illegible]E-04	0.[illegible]E-03	0.[illegible]E+02	0.426286E+02
13	-0.[illegible]E-04	0.[illegible]E-04	0.796635E-02	0.151421E+03
14	-0.[illegible]E-05	0.[illegible]E-05	0.[illegible]E+03	0.562200E+03
15	-0.[illegible]E-05	0.[illegible]E-05	0.[illegible]E+04	0.214245E+04
16	-0.[illegible]E-06	0.[illegible]E-06	0.[illegible]E+05	0.814615E+04
17	-0.[illegible]E-07	0.[illegible]E-07	0.[illegible]E+05	0.292142E+05
18	-0.[illegible]E-08	0.[illegible]E-08	0.[illegible]E+06	0.836704E+05
19	-0.[illegible]E-09	0.[illegible]E-09	0.[illegible]E+07	0.312681E+06
20	-0.[illegible]E-09	-0.[illegible]E-11	0.[illegible]E+08	0.[illegible]E+07

Z=(6 , 3)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.256103E+00	0.147005E+01	-0.147559E+01	0.271225E+00
1	-0.134200E+01	0.449486E+00	-0.444835E+00	-0.133552E+01
2	-0.713938E+00	-0.102186E+01	0.103946E+01	-0.716467E+00
3	0.525994E+00	-0.893029E+00	0.892986E+00	0.514391E+00
4	0.787268E+00	-0.570998E-01	0.430421E-01	0.779839E+00
5	0.384468E+00	0.352148E+00	-0.373432E+00	0.395390E+00
6	0.348508E-01	0.291640E+00	-0.300644E+00	0.742102E-01
7	-0.712095E-01	0.122149E+00	-0.328680E-01	-0.640091E-02
8	-0.542906E-01	0.259474E-01	0.127507E+00	-0.364405E-02
9	-0.226621E-01	-0.289535E-02	0.368254E+00	-0.166367E+00
10	-0.591347E-02	-0.472996E-02	0.620005E+00	-0.833607E+00
11	-0.816202E-03	-0.215694E-02	0.200710E+00	-0.305574E+01
12	0.103127E-03	-0.634132E-03	-0.158296E+01	-0.834508E+01
13	0.103105E-03	-0.128725E-03	-0.305757E+02	-0.186113E+02
14	0.263283E-04	-0.148673E-04	-0.138383E+03	-0.311919E+01
15	0.855599E-05	0.983709E-06	-0.512468E+03	0.275057E+03
16	0.148522E-05	0.100806E-05	-0.141087E+04	0.219912E+04
17	0.139774E-06	0.316332E-06	-0.857280E+03	0.125050E+05
18	-0.145587E-08	0.654225E-07	0.265886E+05	0.531379E+05
19	-0.558152E-08	0.999926E-08	0.275484E+06	0.206822E+06
20	-0.159356E-08	0.163573E-08	0.194886E+07	0.311459E+06

Z=(6 , 4)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.113519E+01	0.361037E+01	-0.361200E+01	0.113713E+01
1	-0.320330E+01	0.146639E+01	-0.146449E+01	-0.320131E+01
2	-0.190563E+01	-0.236355E+01	0.236630E+01	-0.190732E+01
3	0.119484E+01	-0.209704E+01	0.209608E+01	0.119082E+01
4	0.174151E+01	0.264054E-01	-0.321059E-01	0.174048E+01
5	0.631932E+00	0.918801E+00	-0.924466E+00	0.638829E+00
6	-0.161999E+00	0.605033E+00	-0.600709E+00	-0.147418E+00
7	-0.269878E+00	0.150778E+00	-0.124014E+00	-0.259248E+00
8	-0.131123E+00	-0.326939E-01	0.869367E-01	-0.158187E+00
9	-0.300787E-01	-0.434393E-01	0.876833E-01	-0.164729E+00
10	0.169326E-02	-0.185772E-01	-0.135466E+00	-0.331102E+00
11	0.417219E-02	-0.481006E-02	-0.950784E+00	-0.418726E+00
12	0.175362E-02	-0.242556E-03	-0.312859E+01	0.902022E+00
13	0.419856E-03	0.238034E-03	-0.633984E+01	0.903724E+01
14	0.488053E-04	0.112095E-03	0.214874E+01	0.404188E+02
15	-0.649839E-05	0.281788E-04	0.103694E+03	0.121417E+03
16	-0.485334E-05	0.419487E-05	0.658290E+03	0.146609E+03
17	-0.133502E-05	0.115254E-06	0.277503E+04	-0.123422E+04
18	-0.227295E-06	-0.135132E-06	0.722568E+04	-0.126022E+05
19	-0.199559E-07	-0.452470E-07	-0.779476E+04	-0.731329E+03
20	0.175196E-08	-0.861235E-08	-0.261701E+06	-0.293111E+06

Z=(6 , 5)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.330043E+01	0.870760E-01	-0.870238E+01	0.380114E+01
1	-0.762053E+01	0.434612E+01	-0.434539E+01	-0.761994E+01
2	-0.498039E+01	-0.555124E+01	0.555208E+01	-0.498111E+01
3	0.289606E+01	-0.503509E+01	0.503448E+01	0.289477E+01
4	0.498741E+01	0.422778E+00	-0.424779E+00	0.498559E+01
5	0.193242E+01	0.239532E+01	-0.239655E+01	0.193535E+01
6	-0.808469E+00	0.123828E+01	-0.123470E+01	-0.804553E+00
7	-0.746729E+00	0.492670E-01	-0.395579E-01	-0.748452E+00
8	-0.232762E+00	-0.247366E+00	0.256113E+00	-0.251083E+00
9	0.128797E-01	-0.138558E+00	0.117942E+00	-0.282711E-01
10	0.410536E-01	-0.316272E-01	-0.797259E-01	0.145693E-01
11	0.174922E-01	0.255577E-02	-0.257543E+00	0.195598E+00
12	0.331097E-02	0.445398E-02	-0.134162E+00	0.913463E+00
13	-0.214508E-03	0.160003E-02	0.179949E+01	0.232555E+01
14	-0.341796E-03	0.272122E-03	0.100592E+02	0.128010E+01
15	-0.110497E-03	-0.836109E-05	0.299856E+02	-0.225868E+02
16	-0.178520E-04	-0.194896E-04	0.330357E+02	-0.146225E+03
17	-0.695575E-06	-0.592042E-05	-0.348096E+03	-0.516518E+03
18	0.342147E-06	-0.231231E-06	-0.270402E+04	-0.623316E+03
19	0.251414E-06	-0.257695E-07	-0.114135E+05	0.641237E+04
20	0.391139E-07	0.288972E-07	-0.205802E+05	0.617172E+05

Z=(6 , 6)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.114430E+02	0.208368E+02	-0.208369E+02	0.114433E+02
1	-0.181469E+02	0.122261E+02	-0.122258E+02	-0.181468E+02
2	-0.129233E+02	-0.132435E+02	0.132438E+02	-0.129235E+02
3	0.724412E+01	-0.123596E+02	0.123593E+02	0.724373E+01
4	0.993924E+01	0.180805E+01	-0.180869E+01	0.993946E+01
5	0.156635E+01	0.626116E+01	-0.626121E+01	0.156738E+01
6	-0.276403E+01	0.249553E+01	-0.249398E+01	-0.276325E+01
7	-0.185722E+01	-0.565302E+00	0.565869E+00	-0.185909E+01
8	-0.261625E+00	-0.878130E+00	0.877457E+00	-0.267948E+00
9	0.242569E+00	-0.310081E+00	0.297602E+00	0.236432E+00
10	0.154731E+00	0.310134E-02	-0.319033E-01	0.171096E+00
11	0.336370E-01	0.447300E-01	-0.540149E-01	0.118816E+00
12	-0.452719E-02	0.181603E-01	0.156106E+00	0.160164E+00
13	-0.523457E-02	0.253567E-02	0.712911E+00	-0.110362E+00
14	-0.154535E-02	-0.677295E-03	0.119963E+01	-0.201253E+01
15	-0.136825E-03	-0.437861E-03	-0.267742E+01	-0.765235E+01
16	0.607433E-04	-0.100380E-03	-0.278849E+02	-0.108394E+02
17	0.278874E-04	-0.523941E-05	-0.103814E+03	0.545274E+02
18	0.515755E-05	0.391186E-05	-0.115868E+03	0.472669E+03
19	0.120537E-06	0.139851E-05	0.120395E+04	0.176013E+04
20	-0.194310E-06	0.215246E-05	0.974913E+04	0.133492E+04

Z=(6 , 7)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.325422E+02	0.497802E+02	-0.497802E+02	0.325423E+02
1	-0.433886E+02	0.333763E+02	-0.333762E+02	-0.433886E+02
2	-0.334884E+02	-0.319940E+02	0.319941E+02	-0.334885E+02
3	0.183919E+02	-0.303310E+02	0.303308E+02	0.183918E+02
4	0.247692E+02	0.618277E+01	-0.618296E+01	0.247694E+02
5	0.188929E+01	0.164187E+02	-0.164186E+02	0.188962E+01
6	-0.842987E+01	0.490489E+01	-0.490254E+01	-0.842879E+01
7	-0.437344E+01	-0.289434E+01	0.289137E+01	-0.437428E+01
8	0.222815E+00	-0.256650E+01	0.256547E+01	0.221187E+00
9	0.104772E+01	-0.497898E+00	0.490361E+00	0.104804E+01
10	0.404086E+00	0.260020E+00	-0.263911E+00	0.412456E+00
11	0.956115E-03	0.184007E+00	-0.171264E+00	0.197761E-01
12	-0.540087E-01	0.369997E-01	0.233171E-01	-0.559545E-01
13	-0.202663E-01	-0.768771E-02	0.972117E-01	-0.166525E+00
14	-0.171525E-02	-0.649870E-02	-0.203316E+00	-0.477576E+00
15	0.123416E-02	-0.151949E-02	-0.166421E+01	-0.313592E+00
16	0.536734E-03	0.281570E-04	-0.423895E+01	0.404000E+01
17	0.790482E-04	0.114775E-03	0.278088E+01	0.212308E+02
18	-0.106278E-04	0.225778E-04	0.722902E+02	0.403971E+02
19	-0.754164E-05	0.258706E-05	0.309139E+03	-0.136022E+03
20	-0.150657E-05	-0.755398E-06	0.341871E+03	-0.140774E+04

Z=(6 , 8)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.895018E+02	0.119184E+03	-0.119184E+03	0.895013E+02
1	-0.104279E+03	0.894923E+02	-0.894922E+02	-0.104279E+03
2	-0.867934E+02	-0.780483E+02	0.780483E+02	-0.867934E+02
3	0.470218E+02	-0.781894E+02	0.781893E+02	0.470217E+02
4	0.627565E+02	0.188765E+02	-0.188766E+02	0.627565E+02
5	0.457856E+00	0.431981E+02	-0.431980E+02	0.457956E+00
6	-0.244400E+02	0.923126E+01	-0.923108E+01	-0.244400E+02
7	-0.992035E+01	-0.105801E+02	0.105801E+02	-0.992084E+01
8	0.281543E+01	-0.684866E+01	0.684820E+01	0.281509E-01
9	0.347810E+01	-0.234547E+00	0.233539E+00	0.347868E+01
10	0.793094E+00	0.129457E+01	-0.129438E+01	0.793626E+00
11	-0.303920E+00	0.533303E+00	-0.527807E+00	-0.301629E+00
12	-0.231227E+00	0.601315E-03	0.110094E-01	-0.240709E+00
13	-0.417186E-01	-0.699466E-01	0.629036E-01	-0.814529E-01
14	0.125586E-01	-0.238027E-01	-0.850437E-01	-0.271167E-01
15	0.834816E-02	-0.605977E-03	-0.273790E+00	0.231571E+00
16	0.146623E-02	0.197211E-02	0.150090E+00	0.113634E+01
17	-0.238677E-03	0.639928E-03	0.357222E+01	0.162313E+01
18	-0.175649E-03	0.400313E-04	0.118964E+02	-0.773049E+01
19	-0.327687E-04	-0.311407E-04	-0.445642E-01	-0.539980E+02
20	0.181011E-03	-0.106624E-04	-0.180474E+03	-0.118486E+03

Z=(6 , 9)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.241169E+03	0.286578E+03	-0.286577E+03	0.241189E+03
1	-0.282163E+03	0.237383E+03	-0.237382E+03	-0.282165E+03
2	-0.226215E+03	-0.191373E+03	0.191878E+03	-0.226215E+03
3	0.120620E+03	-0.199910E+03	0.199910E+03	0.120620E+03
4	0.160871E+03	0.551616E+02	-0.551615E+02	0.160871E+03
5	-0.818313E+01	0.113997E+03	-0.113997E+03	-0.818311E+01
6	-0.690276E+02	0.160687E+02	-0.160685E+02	-0.690276E+02
7	-0.217666E+02	-0.342570E+02	0.342570E+02	-0.217667E+02
8	0.127567E+02	-0.173049E+02	0.173047E+02	0.127567E+02
9	0.102564E+02	0.243831E+01	-0.240901E+01	0.102586E+02
10	0.876110E+00	0.477587E+01	-0.477584E+01	0.876725E+00
11	-0.166202E+01	0.119717E+01	-0.116616E+01	-0.166315E+01
12	-0.719548E+00	-0.382561E+00	0.383231E+00	-0.723078E+00
13	0.462845E-02	-0.303887E+00	0.297162E+00	-0.200899E-02
14	0.960178E-01	-0.482227E-01	0.284591E-01	0.103102E+00
15	0.290636E-01	0.200741E-01	-0.382824E-01	0.103008E+00
16	-0.110626E-02	0.109800E-01	0.177536E+00	0.137535E+00
17	-0.299850E-02	0.181320E-02	0.679290E+00	-0.303792E+00
18	-0.741391E-03	-0.349643E-03	0.215115E+00	-0.243890E+01
19	0.276791E-04	-0.216281E-03	-0.783519E+01	-0.503136E+01
20	0.579890E-04	-0.226551E-04	-0.327417E+02	0.144648E+02

Z=(6 , 10)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.641781E+03	0.692795E+03	-0.692795E+03	0.641781E+03
1	-0.613541E+03	0.625155E+03	-0.625155E+03	-0.613541E+03
2	-0.585083E+03	-0.474714E+03	0.474714E+03	-0.585083E+03
3	0.309951E+03	-0.514768E+03	0.514768E+03	0.309951E+03
4	0.415849E+03	0.156208E+03	-0.156208E+03	0.415849E+03
5	-0.414614E+02	0.301598E+03	-0.301598E+03	-0.414614E+02
6	-0.192030E+03	0.236903E+02	-0.236903E+02	-0.192030E+03
7	-0.460285E+02	-0.104452E+03	0.104452E+03	-0.460285E+02
8	0.463656E+02	-0.420464E+02	0.420464E+02	0.463656E+02
9	0.282447E+02	0.149604E+02	-0.149605E+02	0.282448E+02
10	-0.178932E+01	0.151272E+02	-0.151271E+02	-0.178919E+01
11	-0.654426E+01	0.181743E+01	-0.181706E+01	-0.654445E+01
12	-0.177758E+01	-0.221557E+01	0.221547E+01	-0.177853E+01
13	0.510944E+00	-0.993473E+00	0.991253E+00	0.510278E+00
14	0.413867E+00	0.177932E-01	-0.216662E-01	0.418427E+00
15	0.565144E-01	0.133733E+00	-0.126739E+00	0.712627E-01
16	-0.317441E-01	0.362810E-01	0.107688E-01	-0.320741E-01
17	-0.146973E-01	-0.388536E-02	0.645903E-01	-0.144089E+00
18	-0.946287E-03	-0.486164E-02	-0.281851E+00	-0.356641E+00
19	0.101243E-02	-0.823296E-03	-0.149493E+01	0.328726E+00
20	0.327299E-03	0.141784E-03	-0.134766E+01	0.520922E+01

Z=(7 , 1)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.159649E+00	0.103762E+00	-0.147425E+00	0.131359E+00
1	-0.122998E+00	0.142693E+00	-0.177662E+00	-0.824237E-01
2	-0.202747E+00	-0.364514E-01	0.678613E-01	-0.153318E+00
3	-0.225697E-01	-0.147934E+00	0.299637E+00	-0.330848E-01
4	0.159918E+00	-0.105365E+00	0.132947E+00	0.985460E-01
5	0.205161E+00	-0.136102E-01	-0.282814E-01	0.127022E+00
6	0.152943E+00	0.392828E-01	-0.143935E+00	0.107630E+00
7	0.834669E-01	0.453097E-01	-0.205697E+00	0.106238E+00
8	0.359436E-01	0.308898E-01	-0.262442E+00	0.173184E+00
9	0.125794E-01	0.159573E-01	-0.355833E+00	0.407020E+00
10	0.358145E-02	0.677651E-02	-0.528076E+00	0.103951E+01
11	0.796185E-03	0.246137E-02	-0.760614E+00	0.287095E+01
12	0.114493E-03	0.782858E-03	-0.600466E+00	0.855481E+01
13	-0.402623E-05	0.221421E-03	0.293639E+01	0.273711E+02
14	-0.101456E-04	0.362762E-04	0.264804E+02	0.933224E+02
15	-0.452659E-05	0.120447E-04	0.158731E+03	0.336159E+03
16	-0.144908E-05	0.270635E-05	0.870701E+03	0.126721E+04
17	-0.387958E-06	0.515070E-06	0.476030E+04	0.494371E+04
18	-0.913637E-07	0.890638E-07	0.256214E+05	0.196667E+05
19	-0.194092E-07	0.158916E-07	0.142573E+06	0.779702E+05
20	-0.377381E-08	0.192018E-08	0.818637E+06	0.294845E+06

Z=(7 , 2)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.429634E+00	0.267862E+00	-0.284692E+00	0.421741E+00
1	-0.217840E+00	0.440906E+00	-0.451320E+00	-0.201417E+00
2	-0.466034E+00	-0.685019E-01	0.830657E-01	-0.450454E+00
3	-0.102843E+00	-0.398212E+00	0.421183E+00	-0.111726E+00
4	0.265765E+00	-0.272490E+00	0.276818E+00	0.235905E+00
5	0.326208E+00	-0.159514E-01	-0.120172E-01	0.298127E+00
6	0.201539E+00	0.118909E+00	-0.170525E+00	0.202212E+00
7	0.757097E-01	0.112663E+00	-0.181573E+00	0.132721E+00
8	0.122206E-01	0.684361E-01	-0.114071E+00	0.163503E+00
9	-0.564480E-02	0.286637E-01	0.303412E-01	0.307566E+00
10	0.103951E+01	-0.583755E-02	0.954086E-02	0.410729E+00
11	0.287095E+01	-0.298545E-02	0.242465E-02	0.157367E+01
12	0.855481E+01	-0.112786E-02	0.415717E-03	0.523224E+01
13	0.273711E+02	-0.343775E-03	0.112672E-04	0.167088E+02
14	0.933224E+02	-0.873795E-04	-0.252763E-04	0.518984E+02
15	0.336159E+03	-0.185653E-04	-0.124574E-04	0.152877E+03
16	0.126721E+04	-0.320597E-05	-0.401077E-05	0.390876E+03
17	0.494371E+04	-0.402452E-06	-0.103114E-05	0.562988E+03
18	0.196667E+05	-0.163040E-07	-0.224283E-06	-0.279056E+04
19	0.779702E+05	0.962614E-08	-0.421177E-07	-0.385751E+05
20	0.391351E-08	-0.683278E-08	-0.310155E+06	-0.325638E+06

Z=(7 , 3)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.118893E+01	0.569839E+00	-0.575610E+00	0.115692E+01
1	-0.402668E+00	0.119414E+01	-0.119700E+01	-0.396367E+00
2	-0.114942E+01	-0.745483E-01	0.807072E-01	-0.114469E+01
3	-0.310227E+00	-0.941852E+00	0.949666E+00	-0.315267E+00
4	0.546315E+00	-0.603844E+00	0.607449E+00	0.534499E+00
5	0.620210E+00	0.262124E-01	-0.410329E-01	0.613066E+00
6	0.291982E+00	0.290765E+00	-0.313110E+00	0.302745E+00
7	0.834137E-01	0.253655E+00	-0.246656E+00	0.724703E-01
8	-0.502072E-01	0.106307E+00	-0.771948E-01	0.108218E-01
9	-0.429400E-01	0.286054E-01	0.105703E+00	0.360767E-01
10	-0.201649E-01	0.149555E-02	0.335037E+00	-0.409743E-01
11	-0.653499E-02	-0.291177E-02	0.749625E+00	-0.525569E+00
12	-0.143937E-02	-0.183382E-02	0.110057E+01	-0.230973E+01
13	-0.140466E-03	-0.669536E-03	-0.415644E+00	-0.786659E+01
14	0.466067E-04	-0.181776E-03	-0.134411E+02	-0.227440E+02
15	0.809254E-04	-0.365899E-04	-0.807443E+02	-0.515759E+02
16	0.104259E-04	-0.470860E-05	-0.271358E+03	-0.407517E+02
17	0.256625E-05	0.414715E-07	-0.146782E-04	0.523133E+03
18	0.428826E-06	0.237419E-06	-0.488189E-04	0.499781E+04
19	0.687832E-07	0.841547E-07	-0.199398E+05	0.507857E+05
20	0.520623E-08	0.199833E-07	0.153995E+05	0.161880E+06

Z=(7 , 4)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.319821E+01	0.111158E+01	-0.111381E+01	0.319776E+01
1	-0.700963E+00	0.312066E+01	-0.312137E+01	-0.698567E+00
2	-0.284956E+01	0.260420E-01	-0.236175E-01	-0.284723E+01
3	-0.824844E+00	-0.223016E+01	0.223239E+01	-0.827192E+00
4	0.126607E+01	-0.135192E+01	0.135031E+01	0.126193E+01
5	0.130320E+01	0.218626E+00	-0.224904E+00	0.130243E+01
6	0.425716E+00	0.728740E+00	-0.735097E+00	0.433189E+00
7	-0.124209E+00	0.461037E+00	-0.457680E+00	-0.107886E+00
8	-0.200789E+00	0.150667E+00	-0.103819E+00	-0.184992E+00
9	-0.106691E+00	-0.117608E-01	0.740812E-01	-0.122181E+00
10	-0.312689E-01	-0.299847E-01	0.112543E+00	-0.151626E+00
11	-0.277426E-02	-0.156417E-01	-0.155078E-01	-0.366169E+00
12	-0.225822E-02	-0.483195E-02	-0.669226E+00	-0.733397E+00
13	0.142032E-02	-0.841555E-03	-0.291456E+01	-0.578784E+00
14	0.473307E-03	0.249658E-04	-0.876708E+01	0.389312E+01
15	0.102408E-03	0.748673E-04	-0.175180E+02	0.283832E+02
16	0.114419E-04	0.296802E-04	0.448029E+01	0.124282E+03
17	0.735502E-05	0.285651E+03	0.404299E+03	
18	0.121249E-05	0.194305E+04	0.784367E+03	
19	0.893286E-07	0.924260E+04	-0.170308E+04	
20	0.327885E+05	-0.301195E+05		

Z=(7 , 5)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.[illegible]E+01	0.1997[illegible]E+01	-[illegible]	0.839174E+01
1	-0.[illegible]E+01	0.801369E+01	-0.[illegible]	-0.106872E+01
2	-0.[illegible]E+01	0.493398E+00	-0.[illegible]	-0.707060E+01
3	-0.210813E+01	-0.539149E+01	0.[illegible]	-0.210916E+01
4	[illegible].312499E+01	-0.306635E+01	0.[illegible]	0.312368E+01
5	0.290392E+01	0.880618E+00	-0.[illegible]	0.290432E+01
6	0.551174E+00	0.182435E+01	-0.[illegible]	0.554582E+00
7	-0.623656E+00	0.878698E+00	-0.[illegible]	-0.618051E+00
8	-0.545521E+00	0.545377E-01	-0.[illegible]	-0.545994E+00
9	-0.190955E+00	-0.164383E+00	0.178446E+00	-0.209692E+00
10	-0.871419E-02	-0.104838E+00	0.[illegible]	-0.599720E-01
11	0.248883E-01	-0.[illegible]	-0.[illegible]	-0.436614E-01
12	0.138931E-01	-0.239769E-02	-0.326999E+00	0.825176E-01
13	0.391702E-02	0.237266E-02	-0.558288E+00	0.791168E+00
14	0.439627E-03	0.131168E-02	0.344449E+00	0.295667E+01
15	-0.140831E-03	0.364162E-03	0.729667E+01	0.664476E+01
16	-0.898318E-04	0.511861E-04	0.349706E+02	0.124508E+01
17	-0.254388E-04	-0.407823E-05	0.104645E-03	-0.807331E+02
18	-0.410194E-05	-0.448173E-05	0.120565E-03	-0.516007E+03
19	-0.102326E-06	-0.[illegible]E-05	-0.[illegible]	-0.292670E+03
20	0.159221E-06	-0.[illegible]	-0.904963E+04	-0.439773E+04

Z=(7 , 6)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.216483E+02	0.316891E+01	-0.316918E+01	0.216483E+02
1	-0.116269E+01	0.208811E+02	-0.203812E+02	-0.116240E+01
2	-0.176195E+02	0.211265E+01	-0.211232E+01	-0.176194E+02
3	-0.534677E+01	-0.132926E+02	0.132927E+02	-0.534714E+01
4	0.796918E+01	-0.713348E+01	0.713308E+01	0.796880E+01
5	0.672148E+01	0.294262E+01	-0.294334E+01	0.672182E+01
6	0.404541E+00	0.458012E+01	-0.458011E+01	0.405795E+00
7	-0.208545E+01	0.158958E+01	-0.158770E+01	-0.208445E+01
8	-0.129760E+01	-0.408397E+00	0.411771E+00	-0.129962E+01
9	-0.221271E+00	-0.604298E+00	0.604632E+00	-0.229137E+00
10	0.141030E+00	-0.240248E+00	0.226988E+00	0.130168E+00
11	0.109038E+00	-0.203359E-01	-0.191215E-01	0.117774E+00
12	0.324851E-01	0.247026E-01	-0.719977E-01	0.123954E+00
13	0.143568E-02	0.138675E-01	0.896330E-01	0.264480E+00
14	-0.286293E-02	0.339604E-02	0.775367E+00	0.293295E+00
15	-0.132114E-02	0.103583E-03	0.236252E+01	-0.115124E+01
16	-0.233193E-03	-0.240636E-03	0.273681E+01	-0.840210E+01
17	-0.902029E-05	-0.978745E-04	-0.144968E+02	-0.280579E+02
18	0.153854E-04	-0.191876E-04	-0.113841E+03	-0.366550E+02
19	0.578094E-05	-0.774695E-06	-0.428118E+03	0.213694E+03
20	0.106989E-05	0.770264E-06	-0.672886E+03	0.190157E+04

Z=(7 , 7)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	[illegible].352581E+02	0.379570E+01	-0.[illegible]	0.352581E+02
1	[illegible].[illegible]E+00	0.515822E+02	-0.515822E+02	0.422486E+00
2	-[illegible].441143E+02	0.716713E+01	-0.716702E+01	-0.441143E+02
3	-0.136177E+02	-0.332675E+02	0.332675E+02	-0.136179E+02
4	[illegible].206717E+02	-0.169920E+02	0.169916E+02	0.206716E+02
5	0.159523E+02	0.905509E+01	-0.905530E+01	0.159834E+02
6	-0.998592E+00	0.115484E+02	-0.115483E+02	-0.998287E+00
7	-0.[illegible]18716E+01	0.259520E+01	-0.259509E+01	-0.618700E+01
8	-0.294918E+01	-0.213817E+01	0.213891E+01	-0.285018E+01
9	[illegible].131[illegible]E+00	-0.173249E+01	0.[illegible]	0.128820E+00
10	0.675792E+00	-0.390970E+00	0.[illegible]	0.675254E+00
11	[illegible].296147E+00	0.132350E+00	-0.[illegible]	0.305547E+00
12	[illegible].[illegible]4E-01	0.121873E+00	-0.[illegible]	0.567188E-01
13	-0.[illegible]E-01	0.349874E-01	0.[illegible]	-0.120711E-02
14	-0.[illegible]	0.[illegible]93E-01	-0.[illegible]	-0.132776E+00
15	-0.[illegible]E-02	-0.[illegible]	0.[illegible]	0.[illegible]
16	0.[illegible]E-03	-0.[illegible]	-0.[illegible]	-0.[illegible]
17	[illegible].[illegible]E-03	-0.[illegible]	-0.[illegible]	0.[illegible]
18	[illegible].[illegible]E-03	0.[illegible]	-0.[illegible]	0.[illegible]
19	0.[illegible]E-04	0.[illegible]	0.[illegible]	0.[illegible]
20	-0.[illegible]E-05	0.[illegible]	0.[illegible]	-0.[illegible]

Z=(7 , 8)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.140212E+03	0.282564E+00	-0.282587E+00	0.140212E+03
1	0.842812E+01	0.130303E+03	-0.130303E+03	0.842316E+01
2	-0.110972E+03	0.221441E+02	-0.221441E+02	-0.110972E+03
3	0.349563E+02	-0.841623E+02	0.841623E+02	-0.349564E+02
4	0.541050E+02	-0.413158E+02	0.413157E+02	0.541050E+02
5	0.387960E+02	0.266539E+02	-0.266539E+02	0.387960E+02
6	-0.691183E+01	0.292654E+02	-0.292653E+02	-0.691171E+01
7	-0.174276E+02	0.327515E+01	-0.327492E+01	-0.174277E+02
8	-0.580394E+01	-0.771488E+01	0.771497E+01	-0.380434E+01
9	0.203035E+01	-0.441439E+01	0.441379E+01	0.202985E+01
10	0.225571E+01	-0.211912E+00	0.210434E+00	0.225632E+01
11	0.539011E+00	0.785099E+00	-0.783506E+00	0.592507E+00
12	0.[illegible]E+00	-0.[illegible]	0.[illegible]	-0.[illegible]
13	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
14	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
15	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
16	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
17	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
18	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
19	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
20	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]

Z=(7 , 9) Z=(7 , 10)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.354791E+03	-0.198078E+02	0.198078E+02	0.354791E+03	0.897167E+03	-0.955380E+02	0.955380E+02	0.897167E+03
1	0.375406E+02	0.329162E+03	-0.329162E+03	0.375406E+02	0.131275E+03	0.832466E+03	-0.832466E+03	0.131275E+03
2	-0.280363E+03	0.651833E+02	-0.651832E+02	-0.280363E+03	-0.711054E+03	0.186434E+03	-0.186434E+03	-0.711054E+03
3	-0.904594E+02	-0.214564E+03	0.214564E+03	-0.904594E+02	-0.235739E+03	-0.550064E+03	0.550064E+03	-0.235739E+03
4	0.142285E+03	-0.102219E+03	0.102219E+03	0.142285E+03	0.375110E+03	-0.256578E+03	0.256578E+03	0.375110E+03
5	0.957224E+02	0.763726E+02	-0.763726E+02	0.957224E+02	0.239363E+03	0.215001E+03	-0.215001E+03	0.239363E+03
6	-0.274273E+02	0.745593E+02	-0.745592E+02	-0.274273E+02	-0.926868E+02	0.190975E+03	-0.190975E+03	-0.926868E+02
7	-0.478182E+02	0.503535E+00	-0.503468E+00	-0.478182E+02	-0.129348E+03	-0.174980E+02	0.174980E+02	-0.129348E+03
8	-0.106721E+02	-0.244952E+02	0.244952E+02	-0.106722E+02	-0.160799E+02	0.730894E+02	-0.730894E+02	-0.160800E+02
9	0.922016E+01	-0.103658E+02	0.103656E+02	0.922008E+01	0.331151E+02	-0.225292E+02	0.225292E+02	0.331151E+02
10	0.647005E+01	0.176214E+01	-0.176246E+01	0.647040E+01	0.169194E+02	0.107521E+02	-0.107522E+02	0.169106E+02
11	0.657857E+00	0.295190E+01	-0.295154E+01	0.658799E+00	-0.127759E+01	0.930355E+01	-0.930335E+01	-0.127739E+01
12	-0.954988E+00	0.846165E+00	-0.843896E+00	-0.954738E+00	-0.392975E+01	0.127281E+01	-0.127222E+01	-0.392996E+01
13	-0.478902E+00	-0.159969E+00	0.163096E+00	-0.483483E+00	-0.120229E+01	-0.121510E+01	0.121523E+01	-0.120374E+01
14	-0.402805E-01	-0.183556E+00	0.177366E+00	-0.529632E-01	0.202824E+00	-0.635467E+00	0.632424E+00	0.200969E+00
15	0.474776E-01	-0.457907E-01	0.753348E-02	0.446327E-01	0.241808E+00	-0.454259E-01	0.375365E-01	0.246650E+00
16	0.212578E-01	0.522685E-02	-0.690019E-01	0.111298E+00	0.548282E-01	0.662202E-01	-0.645920E-01	0.801501E-01
17	0.223710E-02	0.651260E-02	0.124128E+00	0.310777E+00	-0.101433E-01	0.266580E-01	0.398378E-01	0.206659E-01
18	-0.126115E-02	0.162623E-02	0.105597E+01	0.173627E+00	-0.888742E-02	0.143996E-02	0.178641E+00	-0.139748E+00
19	-0.584062E-03	-0.421715E-04	0.242445E+01	-0.260977E+01	-0.172958E-02	-0.208558E-02	-0.763391E-01	-0.707189E+00
20	-0.792435E-04	-0.137818E-03	-0.317302E+01	-0.123262E+02	0.259779E-03	-0.734159E-03	-0.216954E+01	-0.956160E+00

Z=(8 , 1) Z=(8 , 2)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.185206E+00	-0.445322E-01	0.455206E-01	0.139647E+00	0.422350E+00	-0.171559E+00	0.169937E+00	0.406049E+00
1	0.676375E-01	0.131316E+00	-0.177515E+00	0.610192E-01	0.214583E+00	0.373442E+00	-0.390445E+00	0.214331E+00
2	-0.154231E+00	0.898963E-01	-0.108240E+00	-0.103924E+00	-0.313694E+00	0.284428E+00	-0.288830E+00	-0.295952E+00
3	-0.155634E+00	-0.641309E-01	0.102522E+00	-0.119722E+00	-0.357281E+00	-0.160900E+00	0.177023E+00	-0.345945E+00
4	0.132403E-01	-0.126387E+00	0.183682E+00	-0.526257E-02	-0.134788E-01	-0.342635E+00	0.363389E+00	-0.253903E-01
5	0.152523E+00	-0.799156E-01	0.109212E+00	0.884602E-01	0.252312E+00	-0.199222E+00	0.201021E+00	0.222870E+00
6	0.179729E+00	-0.561811E-02	-0.330395E-01	0.108065E+00	0.275546E+00	0.318315E-02	-0.311392E-01	0.248774E+00
7	0.133919E+00	0.349808E-01	-0.131462E+00	0.910518E-01	0.170331E+00	0.987418E-01	-0.153526E+00	0.169514E+00
8	0.735789E-01	0.392937E-01	-0.188649E+00	0.903681E-01	0.603997E-01	0.959161E-01	-0.165004E+00	0.118101E+00
9	0.344920E-01	0.274669E-01	-0.239614E+00	0.147365E+00	0.148267E-01	0.587907E-01	-0.117452E+00	0.149190E+00
10	0.131061E-01	0.148542E-01	-0.328603E+00	0.324280E+00	-0.260396E-02	0.272127E-01	-0.141197E-01	0.281006E+00
11	0.418687E-02	0.669074E-02	-0.504931E+00	0.796938E+00	-0.445219E-02	0.100491E-01	0.256110E+00	0.553780E+00
12	0.111607E-02	0.269436E-02	-0.818746E+00	0.211033E+01	-0.264522E-02	0.299077E-02	0.103174E+01	0.104421E+01
13	0.230929E-03	0.895716E-03	-0.120262E+01	0.601130E+01	-0.112876E-02	0.692272E-03	0.369328E+01	0.172202E+01
14	0.293556E-04	0.276256E-03	-0.639652E+00	0.183652E+02	-0.390524E-03	0.104586E-03	0.120173E+02	0.149285E+01
15	-0.288629E-05	0.772092E-04	0.696694E+01	0.598421E+02	-0.114406E-03	-0.235542E-05	0.385804E+02	-0.687885E+01
16	-0.354606E-05	0.197031E-04	0.558023E+02	0.205633E+03	-0.288706E-04	-0.886453E-05	0.122416E+03	-0.617566E+02
17	-0.151398E-05	0.461616E-05	0.324382E+03	0.751075E+03	-0.628322E-05	-0.403835E-05	0.376740E+03	-0.331697E+03
18	-0.485986E-06	0.996553E-06	0.174682E+04	0.285399E+04	-0.115860E-05	-0.129596E-05	0.106683E+04	-0.177423E+04
19	-0.132806E-06	0.198629E-06	0.923476E+04	0.112512E+05	-0.170395E-06	-0.342069E-06	0.233631E+04	-0.853238E+04
20	-0.323951E-07	0.365518E-07	0.491257E+05	0.455990E+05	-0.155914E-07	-0.780757E-07	-0.134428E+03	-0.400542E+05

Z=(2 , 3)					Z=(3 , 4)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.103166E+01	-0.569074E+00	0.557843E+00	0.102597E+01	0.250328E+01	-0.174795E+01	0.174731E+01	0.250128E+01
1	0.637516E+00	0.921208E+00	-0.927270E+00	0.653172E+00	0.191024E+01	0.220133E+01	-0.220343E+01	0.191071E+01
2	-0.791920E+00	0.790872E+00	-0.791535E+00	-0.695261E+00	-0.159996E+01	0.212181E+01	-0.212173E+01	-0.159755E+01
3	-0.879621E+00	-0.343621E+00	0.350689E+00	-0.876489E+00	-0.217976E+01	-0.740431E+00	0.743178E+00	-0.217906E+01
4	-0.717079E-01	-0.801430E+00	0.808429E+00	-0.779950E-01	-0.185025E+00	-0.187720E+01	0.187929E+01	-0.187897E+00
5	0.512476E+00	-0.420309E+00	0.417327E+00	0.500354E+00	0.116850E+01	-0.865785E+00	0.863627E+00	0.116427E+01
6	0.499485E+00	0.630893E-01	-0.784689E-01	0.492522E+00	0.994194E+00	0.282158E+00	-0.288950E+00	0.993598E+00
7	0.232824E+00	0.243341E+00	-0.266490E+00	0.243043E+00	0.307354E+00	0.586365E+00	-0.593424E+00	0.315226E+00
8	0.332442E-01	0.193402E+00	-0.209776E+00	0.712750E-01	-0.933881E-01	0.366874E+00	-0.364766E+00	-0.756913E-01
9	-0.357734E-01	0.937437E-01	-0.745306E-01	0.362993E-01	-0.154271E+00	0.116700E+00	-0.910159E-01	-0.133851E+00
10	-0.345342E-01	0.297232E-01	0.829323E-01	0.625022E-01	-0.888619E-01	0.141445E-02	0.646776E-01	-0.921596E-01
11	-0.180510E-01	0.446395E-02	0.319329E+00	0.359697E-01	-0.303535E-01	-0.204251E-01	0.130071E+00	-0.127596E+00
12	-0.674491E-02	-0.140968E-02	0.755950E+00	-0.273670E+00	-0.559002E-02	-0.129107E-01	0.877509E-01	-0.350893E+00
13	-0.187648E-02	-0.139638E-02	0.147060E+01	-0.156241E+01	0.740119E-03	-0.486403E-02	-0.349310E+00	-0.859326E+00
14	-0.356831E-03	-0.639957E-03	0.186178E+01	-0.598112E+01	0.102189E-02	-0.122139E-02	-0.219098E+01	-0.149772E+01
15	-0.202446E-04	-0.212188E-03	-0.268190E+01	-0.196649E+02	0.452362E-03	-0.159743E-03	-0.817622E+01	-0.307134E+00
16	0.177333E-04	-0.551110E-04	-0.360254E+02	-0.574090E+02	0.132324E-03	0.250253E-04	-0.236314E+02	0.132187E+02
17	0.963641E-05	-0.111656E-04	-0.205458E+03	-0.139095E+03	0.272301E-04	0.231667E-04	-0.479963E+02	0.829207E+02
18	0.216668E-05	-0.158047E-05	-0.952100E+03	-0.180583E+03	0.369292E-05	0.837025E-05	0.755434E+00	0.360997E+03
19	0.806659E-06	-0.569095E-07	-0.392970E+04	0.854580E+03	-0.321378E-06	0.208135E-05	0.718636E+03	0.125137E+04
20	0.163971E-06	0.538950E-07	-0.144737E+05	0.101313E+05	-0.287660E-06	0.373712E-06	0.524210E+04	0.311801E+04

Z=(2 , 5)					Z=(3 , 6)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.599302E+01	-0.509521E+01	0.509492E+01	0.599237E+01	0.142046E+02	-0.143221E+02	0.143220E+02	0.142043E+02
1	0.534737E+01	0.519768E+01	-0.519840E+01	0.534762E+01	0.145990E+02	0.122063E+02	-0.122065E+02	0.145991E+02
2	-0.367502E+01	0.559359E+01	-0.559546E+01	-0.367418E+01	-0.850367E+01	0.146238E+02	-0.146237E+02	-0.850338E+01
3	-0.542727E+01	-0.165050E+01	0.165152E+01	-0.542718E+01	-0.136133E+02	-0.380570E+01	0.380605E+01	-0.136134E+02
4	-0.388969E+00	-0.449979E+01	0.450033E+01	-0.390148E+00	-0.718193E+00	-0.110374E+02	0.110375E+02	-0.718641E+00
5	0.283743E+01	-0.179310E+01	0.179193E+01	0.283610E+01	0.713666E+01	-0.375338E+01	0.375286E+01	0.715570E+01
6	0.208542E+01	0.973364E+00	-0.975882E+00	0.208701E+01	0.452070E+01	0.302459E+01	-0.302540E+01	0.452117E+01
7	0.311517E+00	0.140673E+01	-0.140807E+01	0.315373E+00	-0.753609E-01	0.337277E+01	-0.337277E+01	-0.738763E-01
8	-0.420947E+00	0.660836E+00	-0.656873E+00	-0.475215E+00	-0.157561E+01	0.109060E+01	-0.108841E+01	-0.157483E+01
9	-0.415312E+00	0.624189E-01	-0.495494E-01	-0.414194E+00	-0.955050E+00	0.282462E+00	0.286712E+00	-0.957033E+00
10	-0.161724E+00	-0.110925E+00	0.130131E+00	-0.179283E+00	-0.198074E+00	-0.431169E+00	0.433194E+00	-0.207212E+00
11	-0.200892E-01	-0.816063E-01	0.806771E-01	-0.777538E-01	0.789875E-01	-0.192362E+00	0.179968E+00	0.630917E-01
12	0.139877E-01	-0.296387E-01	-0.576045E-01	-0.895883E-01	0.779325E-01	-0.317592E-01	-0.149865E-01	0.749446E-01
13	0.106428E-01	-0.523194E-02	-0.380252E+00	-0.426631E-01	0.292767E-01	0.119143E-01	-0.975242E-01	0.109277E+00
14	0.396504E-02	0.792491E-03	-0.829734E+00	0.500187E+00	0.459068E-02	0.100626E-01	-0.186367E-01	0.319083E+00
15	0.829911E-03	0.934369E-03	-0.100904E+01	0.269833E+01	-0.111943E-02	0.344311E-02	0.609492E+00	0.663424E+00
16	0.538795E-04	0.365626E-03	0.271733E+01	0.877003E+01	-0.962687E-03	0.558453E-03	0.276415E+01	0.192353E+00
17	-0.511372E-04	0.874253E-04	0.253393E+02	0.182963E+02	-0.316261E-03	-0.625982E-04	0.706911E+01	-0.362809E+01
18	-0.241619E-04	0.107977E-04	0.112979E+03	-0.104634E+01	-0.543011E-04	-0.696097E-04	0.521036E+01	-0.307963E+02
19	-0.642643E-05	-0.124820E-05	0.343249E+03	-0.250601E+03	0.996310E-06	-0.228980E-04	-0.600143E+02	-0.979961E+02
20	-0.167122E-05	-0.109993E-05	0.345633E+03	-0.166152E+04	0.382825E-05	-0.416347E-05	-0.419660E+03	-0.131710E+03

Z=(8 , 7)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.334637E+02	-0.392532E+02	0.392532E+02	0.334636E+02
1	0.391907E+02	0.286116E+02	-0.286117E+02	0.391907E+02
2	-0.198228E+02	0.380466E+02	-0.380468E+02	-0.198227E+02
3	-0.344232E+02	-0.900395E+01	0.900407E+01	-0.344232E+02
4	-0.114085E+01	-0.275821E+02	0.275821E+02	-0.114101E+01
5	0.183186E+02	-0.793442E+01	0.793422E+01	0.183186E+02
6	0.100001E+02	0.892044E+01	-0.892068E+01	0.100003E+02
7	-0.193183E+01	0.809125E+01	-0.809107E+01	-0.193085E+01
8	-0.453261E+01	0.146664E+01	-0.146576E+01	-0.453243E+01
9	-0.197933E+01	-0.155282E+01	0.155382E+01	-0.198039E+01
10	0.424951E-01	-0.122573E+01	0.122473E+01	0.394979E-01
11	0.447979E+00	-0.324784E+00	0.318393E+00	0.446382E+00
12	0.224212E+00	0.586036E-01	-0.707126E-01	0.233228E+00
13	0.396148E-01	0.812756E-01	-0.823545E-01	0.762204E-01
14	-0.125498E-01	0.304967E-01	0.407753E-01	0.592115E-01
15	-0.105946E-01	0.383221E-02	0.256273E+00	-0.463826E-01
16	-0.324683E-02	-0.163111E-02	0.432594E+00	-0.644142E+00
17	-0.325321E-03	-0.105562E-02	-0.362398E+00	-0.234284E+01
18	0.151991E-03	-0.279245E-03	-0.690576E+01	-0.394178E+01
19	0.834172E-04	-0.242213E-04	-0.265617E+02	0.784573E+01
20	0.198129E-04	0.166378E-04	-0.474781E+02	0.897756E+02

Z=(8 , 8)

REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0.786096E+02	-0.105718E+03	0.105718E+03	0.786096E+02
0.104023E+03	0.670891E+02	-0.670891E+02	0.104023E+03
-0.465260E+02	0.987925E+02	-0.987925E+02	-0.465259E+02
-0.876901E+02	-0.216771E+02	0.216771E+02	-0.876901E+02
-0.132216E+01	-0.699118E+02	0.699118E+02	-0.132222E+01
0.476210E+02	-0.169046E+02	0.169045E+02	0.476210E+02
0.224397E+02	0.255504E+02	-0.255505E+02	0.224398E+02
-0.862902E+01	0.194320E+02	-0.194319E+02	-0.862888E+01
-0.123119E+02	0.756827E+00	-0.756536E+00	-0.123119E+02
-0.364821E+01	-0.554655E+01	0.554670E+01	-0.364872E+01
0.139309E+01	-0.301111E+01	0.301038E+01	0.139237E+01
0.152436E+01	-0.233953E+00	0.231908E+00	0.152508E+01
0.462159E+00	0.483247E+00	-0.484710E+00	0.466569E+00
0.266905E+00	-0.260253E+00	-0.387087E-01	
-0.916807E-01	0.470774E-01	-0.197889E-01	-0.927121E-01
-0.334814E-01	-0.154055E-01	0.563453E-01	-0.934645E-01
-0.303758E-02	-0.120553E-01	-0.521296E-01	-0.197545E+00
0.235237E-02	-0.319353E-02	-0.571298E+00	-0.206454E+00
0.119733E-02	-0.763722E-04	-0.164920E+01	0.995642E+00
0.240520E-03	0.247625E-03	-0.940063E+00	0.632266E+01
-0.816846E-05	0.941767E-04	0.147693E+02	0.167072E+02

Z=(8 , 9)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.184565E+03	-0.281323E+03	0.281323E+03	0.184565E+03
1	0.274044E+03	0.157588E+03	-0.157588E+03	0.274044E+03
2	-0.109862E+03	0.256378E+03	-0.256378E+03	-0.109862E+03
3	-0.224786E+03	-0.527680E+02	0.527680E+02	-0.224786E+03
4	0.121308E+00	-0.179091E+03	0.179091E+03	0.121297E+00
5	0.124802E+03	-0.362279E+02	0.362279E+02	0.124802E+03
6	0.508856E+02	0.718953E+02	-0.718953E+02	0.508856E+02
7	-0.302926E+02	0.467348E+02	-0.467347E+02	-0.302925E+02
8	-0.324436E+02	-0.591479E+01	0.591483E+01	-0.324436E+02
9	-0.342877E+01	-0.172017E+02	0.172047E+02	-0.342894E+01
10	0.646304E+01	-0.661829E+01	0.661799E+01	0.646292E+01
11	0.429687E+01	0.111240E+01	-0.111289E+01	0.429689E+01
12	0.569246E+00	0.190391E+01	-0.190472E+01	0.570706E+00
13	-0.549026E+00	0.631792E+00	-0.628734E+00	-0.548918E+00
14	-0.328504E+00	-0.486584E-01	0.497221E-01	-0.333891E+00
15	-0.555291E-01	-0.110598E+00	0.108182E+00	-0.749080E-01
16	0.207246E-01	-0.284563E-01	-0.852045E-02	-0.231174E-02
17	0.144927E-01	-0.185923E-02	-0.180158E+00	0.577098E-01
18	0.320054E-02	0.356202E-02	-0.519968E-01	0.455041E+00
19	-0.236278E-03	0.103386E-02	0.106905E+01	0.999616E+00
20	-0.259248E-03	0.125737E-03	0.467765E+01	-0.975897E+00

Z=(8 , 10)

REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0.433805E+03	-0.742559E+03	0.742559E+03	0.433805E+03
0.718443E+03	0.371131E+03	-0.371131E+03	0.718443E+03
0.665449E+03	-0.665449E+03	-0.260777E+03	
-0.579166E+03	-0.129321E+03	0.129321E+03	-0.579166E+03
0.781509E+01	-0.462402E+03	0.462402E+03	0.781509E+01
0.328840E+03	-0.779735E+02	0.779734E+02	0.328840E+03
0.116336E+03	0.200000E+03	-0.200000E+03	0.116336E+03
-0.965293E+02	0.112585E+03	-0.112585E+03	-0.965293E+02
-0.839935E+02	-0.293315E+02	0.293316E+02	-0.839936E+02
-0.352854E+01	-0.498420E+02	0.498420E+02	-0.352859E+01
0.229794E+02	-0.127735E+02	0.127754E+02	0.229794E+02
0.107095E+02	0.732998E+01	-0.733007E+01	0.107097E+02
-0.683994E+00	0.597992E+01	-0.597967E+01	-0.683671E+00
-0.242794E+01	0.100529E+01	-0.100440E+01	-0.242811E+01
-0.858740E+00	-0.658669E+00	0.659307E+00	-0.860745E+00
0.484206E-01	-0.418556E+00	0.415027E+00	0.446237E-01
0.149787E+00	-0.657950E-01	0.526450E-01	0.143722E+00
0.458181E-01	0.293503E-01	-0.410845E-01	0.808021E-01
0.769340E-04	0.181237E-01	0.496542E-01	0.819128E-01
-0.479030E-02	0.318717E-02	0.315508E+00	-0.449841E-01
-0.161130E-02	-0.668223E-03	0.443605E+00	-0.917785E+00

Z=(9 , 1)					Z=(9 , 2)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.3[illegible]E+01	-0.[illegible]	0.[illegible]E+00	0.[illegible]	0.[illegible]	-0.[illegible]E+00	0.393113E+00	0.776066E-01
1	0.16491[illegible]+00	0.21569[illegible]E-01	-0.[illegible]E-01	0.[illegible]	0.[illegible]	0.[illegible]E-01	-0.424388E-01	0.[illegible]E+00
2	-0.164915[illegible]	0.12683[illegible]+00	-0.[illegible]E+00	0.[illegible]	0.[illegible]	0.[illegible]E+00	-0.384405E+00	0.477540E-01
3	-0.15811[illegible]+00	0.[illegible]E-01	-0.[illegible]E-01	-0.[illegible]	-0.[illegible]	0.[illegible]E+00	-0.155457E+00	-0.314718E+00
4	-0.115746E+00	-0.[illegible]E-01	0.117787E+00	-0.[illegible]	-0.[illegible]	-0.[illegible]E+00	0.217348E+00	-0.255411E+00
5	0.[illegible]E-01	-0.[illegible]E+00	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]E+00	0.308489E+00	0.252999E-01
6	0.148728E+00	-0.[illegible]E-01	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]E+00	0.148500E+00	0.205034E+00
7	0.[illegible]E+00	-0.[illegible]E-01	-0.[illegible]E-01	0.[illegible]	0.237143E+00	0.136061E-01	-0.413660E-01	0.211500E+00
8	0.[illegible]E+00	0.[illegible]E-01	-0.[illegible]E+00	0.[illegible]	0.[illegible]	0.865915E-01	-0.139555E+00	0.145478E+00
9	0.692[illegible]E-01	0.[illegible]E-01	-0.[illegible]E+00	0.782797E-01	0.[illegible]	0.832516E-01	-0.151639E+00	0.106183E+00
10	0.[illegible]E-01	0.[illegible]E-01	-0.[illegible]E+00	0.[illegible]	0.[illegible]	0.527156E-01	-0.118938E+00	0.135928E+00
11	0.[illegible]E-01	0.[illegible]	-0.[illegible]E+00	0.[illegible]	0.[illegible]	0.[illegible]	0.258153E-01	-0.436570E-01	0.254382E+00
12	0.[illegible]E-02	0.[illegible]	-0.[illegible]E+00	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.149365E+00	0.307192E+00
13	0.[illegible]E-02	0.[illegible]	-0.[illegible]E+00	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	0.737439E+00	0.100031E+01
14	0.[illegible]E-03	0.[illegible]	-0.[illegible]E+01	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.259431E+01	0.183404E+01
15	0.[illegible]E-04	0.[illegible]	-0.[illegible]E+01	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	0.851420E+01	0.301455E+01
16	0.[illegible]E-05	0.[illegible]	-0.[illegible]E+01	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
17	-0.[illegible]E-05	0.[illegible]	0.[illegible]E+02	0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
18	-0.[illegible]E-05	0.[illegible]	0.[illegible]E+03	0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
19	-0.[illegible]E-06	0.[illegible]	0.[illegible]E+03	0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
20	-0.[illegible]E-06	0.[illegible]	0.[illegible]E+04	0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]

Z=(9 , 3)					Z=(9 , 4)			
n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+01	0.[illegible]	0.[illegible]	-0.[illegible]E+01	0.[illegible]	0.[illegible]E-01
1	0.[illegible]E-01	-0.[illegible]	-0.[illegible]E-02	0.[illegible]	0.[illegible]	-0.[illegible]E+01	0.[illegible]	0.[illegible]E-01
2	0.[illegible]E+00	0.[illegible]	-0.[illegible]E+00	0.[illegible]	0.[illegible]	0.[illegible]E+00	0.[illegible]	0.[illegible]E+00
3	-0.[illegible]E+00	0.[illegible]	-0.[illegible]E+00	-0.[illegible]	-0.[illegible]	0.[illegible]E+01	0.[illegible]	-0.[illegible]E+01
4	-0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00	-0.[illegible]	-0.[illegible]	-0.[illegible]E+01	0.[illegible]	-0.[illegible]E+01
5	0.[illegible]E-01	-0.[illegible]	0.[illegible]E+00	-0.[illegible]	-0.[illegible]	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
6	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00	0.[illegible]	0.[illegible]	0.[illegible]E+01	-0.[illegible]	0.[illegible]E+00
7	0.[illegible]E+00	0.[illegible]	-0.[illegible]E-01	0.[illegible]	0.[illegible]	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
8	0.[illegible]E+00	0.[illegible]	-0.[illegible]E+00	0.[illegible]	0.[illegible]	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
9	0.[illegible]E-01	0.[illegible]	-0.[illegible]E+00	0.[illegible]	-0.[illegible]	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
10	-0.[illegible]E-01	0.[illegible]	-0.[illegible]E-01	0.[illegible]	-0.[illegible]	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
11	-0.[illegible]E-01	0.[illegible]	0.[illegible]E-01	0.[illegible]	0.[illegible]	0.[illegible]E+00	0.[illegible]	-0.[illegible]E+00
12	-0.[illegible]E-01	0.[illegible]	0.[illegible]E+00	0.[illegible]	-0.[illegible]	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
13	-0.[illegible]E-02	-0.[illegible]	0.[illegible]E-01	-0.[illegible]	-0.[illegible]	0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
14	-0.[illegible]E-02	-0.[illegible]	0.[illegible]E+01	-0.[illegible]	-0.[illegible]	-0.[illegible]E+00	-0.[illegible]	-0.[illegible]E+00
15	-0.[illegible]E-03	-0.[illegible]	0.[illegible]E+01	-0.[illegible]	0.[illegible]	-0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
16	-0.[illegible]E-04	-0.[illegible]	0.[illegible]E+01	-0.[illegible]	0.[illegible]	-0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
17	-0.[illegible]E-05	-0.[illegible]	-0.[illegible]E+02	-0.[illegible]	0.[illegible]	-0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
18	-0.[illegible]E-05	-0.[illegible]	-0.[illegible]E+02	-0.[illegible]	0.[illegible]	-0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
19	-0.[illegible]E-06	-0.[illegible]	-0.[illegible]E+03	-0.[illegible]	0.[illegible]	-0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00
20	-0.[illegible]E-06	-0.[illegible]	-0.[illegible]E+03	-0.[illegible]	0.[illegible]	-0.[illegible]E+00	-0.[illegible]	0.[illegible]E+00

Z=(9 , 5)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.592399E+00	-0.718298E+01	0.718337E+01	-0.592925E+00
1	0.679425E+01	-0.117486E+01	0.117439E+01	0.679380E+01
2	0.215676E+01	0.592227E+01	-0.592256E+01	0.215724E+01
3	-0.448188E+01	0.316036E+01	-0.317998E+01	-0.448109E+01
4	-0.377040E+01	-0.255219E+01	0.253327E+01	-0.377053E+01
5	0.517233E+00	-0.352998E+01	0.353036E+01	0.515895E+00
6	0.242190E+01	-0.101306E+01	0.101164E+01	0.242057E+01
7	0.153476E+01	0.926639E+00	-0.929123E+00	0.153552E+01
8	0.188403E+00	0.110732E+01	-0.110889E+01	0.192663E+00
9	-0.374875E+00	0.520558E+00	-0.516642E+00	-0.368233E+00
10	-0.326607E+00	0.684356E-01	-0.545844E-01	-0.323671E+00
11	-0.139682E+00	-0.750215E-01	0.926999E-01	-0.154808E+00
12	-0.275599E-01	-0.633972E-01	0.793761E-01	-0.857237E-01
13	0.642170E-02	-0.270482E-01	-0.313022E-01	-0.120756E+00
14	0.783820E-02	-0.678803E-02	-0.304923E+00	-0.151233E+00
15	0.358018E-02	-0.381004E-03	-0.926394E+00	0.165487E+00
16	0.103297E-02	0.550038E-03	-0.189143E+01	0.194144E+01
17	0.170286E-03	0.314218E-03	-0.135111E+01	0.821842E+01
18	-0.817920E-05	0.102590E-03	0.114445E+02	0.247118E+02
19	-0.169322E-04	0.223449E-04	0.804332E+02	0.494401E+02
20	-0.678261E-05	0.253019E-05	0.345847E+03	-0.896647E+01

Z=(9 , 6)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.303030E+01	-0.184036E+02	0.184007E+02	-0.303049E+01
1	0.172240E+02	-0.429052E+01	0.429033E+01	0.172238E+02
2	0.634498E+01	0.147606E+02	-0.147608E+02	0.634517E+01
3	-0.109988E+02	0.834076E+01	-0.834059E+01	-0.109986E+02
4	-0.927331E+01	-0.632113E+01	0.632131E+01	-0.927342E+01
5	0.166143E+01	-0.843694E+01	0.843698E+01	0.166088E+01
6	0.591980E+01	-0.175502E+01	0.175438E+01	0.591946E+01
7	0.308840E+01	0.273639E+01	-0.273629E+01	0.308899E+01
8	-0.252122E+00	0.253555E+01	-0.253550E+01	-0.250400E+00
9	-0.120762E+01	0.800124E+00	-0.797656E+00	-0.120600E+01
10	-0.733247E+00	-0.189485E+00	0.194619E+00	-0.735009E+00
11	-0.180921E+00	-0.316565E+00	0.320493E+00	-0.190914E+00
12	0.397713E-01	-0.157197E+00	0.147226E+00	0.192198E-01
13	0.558699E-01	-0.367256E-01	-0.127253E-01	0.391239E-01
14	0.254155E-01	0.356231E-02	-0.119484E+00	0.796573E-01
15	0.612387E-02	0.687495E-02	-0.135351E+00	0.316267E+00
16	0.117013E-03	0.309642E-02	0.299507E+00	0.889692E+00
17	-0.586735E-05	0.787179E-03	0.240127E+01	0.143532E+01
18	-0.283799E-03	0.760199E-04	0.874168E+01	-0.133533E+01
19	-0.767587E-04	-0.323234E-04	0.199452E+02	-0.218227E+02
20	-0.111234E-04	-0.194726E-04	0.744355E+01	-0.104023E+03

Z=(9 , 7)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.112567E+02	-0.467343E+02	0.467346E+02	-0.112567E+02
1	0.434577E+02	-0.138875E+02	0.138874E+02	0.434577E+02
2	0.120391E+02	0.363501E+02	-0.363502E+02	0.120392E+02
3	-0.272922E+02	0.217866E+02	-0.217865E+02	-0.272921E+02
4	-0.230535E+02	-0.160047E+02	0.160051E+02	-0.230536E+02
5	0.517186E+01	-0.205868E+02	0.205868E+02	0.517167E+01
6	0.147983E+02	-0.273604E+01	0.273579E+01	0.147983E+02
7	0.623142E+01	0.776354E+01	-0.776379E+01	0.623172E+01
8	-0.205308E+01	0.576719E+01	-0.576696E+01	-0.205450E+01
9	-0.337039E+01	0.903131E+00	-0.902123E+00	-0.337072E+01
10	-0.145492E+01	-0.113047E+01	0.113181E+01	-0.145634E+01
11	-0.226412E-01	-0.901530E+00	0.900312E+00	-0.264015E-01
12	0.299852E+00	-0.277068E+00	0.269871E+00	0.298676E+00
13	0.178047E+00	0.150852E-01	-0.316690E-01	0.180953E+00
14	0.489454E-01	0.535246E-01	-0.672988E-01	0.839260E-01
15	-0.238752E-02	0.255893E-01	0.276973E-01	0.935344E-01
16	-0.691447E-02	0.561830E-02	0.282679E+00	0.707298E-01
17	-0.292485E-02	-0.235016E-03	0.740237E+00	-0.434243E+00
18	-0.315577E-03	-0.676032E-03	0.701433E+00	-0.252488E+01
19	0.117032E-03	-0.270257E-03	-0.697747E+01	-0.743080E+01
20	0.812903E-04	-0.531256E-04	-0.270455E+02	-0.918560E+01

Z=(9 , 8)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.367992E+02	-0.118181E+03	0.118181E+03	-0.367992E+02
1	0.109376E+03	-0.421042E+02	0.421042E+02	0.109376E+03
2	0.501968E+02	0.922370E+02	-0.922370E+02	0.501968E+02
3	-0.683534E+02	0.568821E+02	-0.568821E+02	-0.683534E+02
4	-0.579269E+02	-0.411242E+02	0.411242E+02	-0.579269E+02
5	0.155739E+02	-0.510912E+02	0.510912E+02	0.155739E+02
6	0.375531E+02	-0.321038E+01	0.321049E+01	0.375531E+02
7	0.124247E+02	0.215660E+02	-0.215661E+02	0.124249E+02
8	-0.813748E+01	0.130067E+02	-0.130066E+02	-0.813731E+01
9	-0.881177E+01	-0.209278E+00	0.209641E+00	-0.881185E+01
10	-0.247372E+01	-0.401636E+01	0.401657E+01	-0.247436E+01
11	0.933969E+00	-0.215973E+01	0.215891E+01	0.932966E+00
12	0.106641E+01	-0.252022E+00	0.249359E+00	0.106667E+01
13	0.373197E+00	0.297749E+00	-0.300707E+00	0.378265E+00
14	0.255432E-02	0.195073E+00	-0.189818E+00	0.152023E-01
15	-0.564822E-01	0.492953E-01	-0.166412E-01	-0.471926E-01
16	-0.269231E-01	-0.361678E-02	0.770822E-01	-0.773451E-01
17	-0.524815E-02	-0.760483E-02	0.333413E-01	-0.251984E+00
18	0.682241E-03	-0.294348E-02	-0.491241E+00	-0.534251E+00
19	0.806196E-03	-0.467740E-03	-0.225211E+01	0.278561E-01
20	0.262861E-03	0.765171E-04	-0.490048E+01	0.544760E+01

n	Z=(9 , 9) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	Z=(9 , 10) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	[illegible]	[illegible]	[illegible]	-0.112820E+03	-0.3287[illegible]	-0.[illegible]9713E+03	0.749713E+03	-0.328703E+03
1	0.2756[illegible]E+03	-0.122[illegible]	0.12[illegible]27[illegible]+03	0.275057E+03	0.6919[illegible]	-0.347826E+03	0.347826E+03	0.691947E+03
2	0.137725E+03	0.231[illegible]	-0.231564E+03	0.137725E+03	0.374276E+03	0.583140E+03	-0.583140E+03	0.374276E+03
3	-0.172477E+03	0.1[illegible]E+03	-0.148693E+03	-0.172477E+03	-0.437807E-03	0.389414E+03	-0.389414E+03	-0.437807E+03
4	-0.146975E+03	-0.1[illegible]	0.105664E+03	-0.146975E+03	-0.376060E+03	-0.278280E+03	0.278280E+03	-0.376060E+03
5	0.465579E+02	-0.12[illegible]	0.12[illegible]E+03	0.465579E+02	0.131144E+03	-0.326957E+03	0.326957E+03	0.131144E+03
6	0.963256E+02	0.21[illegible]E+00	-0.21[illegible]E+00	0.963256E+02	0.249087E+03	0.197464E+02	-0.197463E+02	0.249087E+03
7	0.240629E+02	0.591210E+02	-0.591210E+02	0.240629E+02	0.440504E+02	0.160819E+03	-0.160819E+03	0.440505E+02
8	-0.270051E+02	0.290[illegible]E+02	-0.290049E+02	-0.270050E+02	-0.829563E+02	0.636957E+02	-0.636957E+02	-0.829562E+02
9	-0.221741E+02	-0.6223[illegible]E+01	0.622354E+01	-0.221742E+02	-0.543490E+02	-0.290621E+02	0.290622E+02	-0.543490E+02
10	-0.297009E+01	-0.12167[illegible]E+02	0.121681E+02	-0.297001E+01	0.110275E+01	-0.341008E+02	0.341007E+02	0.110268E+01
11	0.45128[illegible]E+01	-0.450765E+01	0.450727E+01	0.451202E+01	0.159360E+02	-0.782528E+01	0.782515E+01	0.159360E+02
12	0.297666E+01	0.642029E+00	-0.642789E+00	0.297715E+01	0.717871E+01	0.490121E+01	-0.490134E+01	0.717894E+01
13	0.51316[illegible]E+00	0.126511E+01	-0.125504E+01	0.515092E+00	-0.242607E+00	0.400260E+01	-0.400231E+01	-0.242122E+00
14	-0.30926[illegible]E+00	0.483837E+00	-0.482318E+00	-0.307023E+00	-0.153369E+01	0.834350E+00	-0.833104E+00	-0.153370E+01
15	-0.22859[illegible]	0.159659E-01	-0.677534E-02	-0.222695E+00	-0.632155E+00	-0.342179E+00	0.343673E+00	-0.634650E+00
16	-0.5[illegible]9361E-01	-0.646927E-01	0.698918E-01	-0.819954E-01	-0.267867E-01	-0.279100E+00	0.275885E+00	-0.331837E-01
17	0.561151E-02	-0.301677E-01	-0.154144E-01	-0.457649E-01	0.793440E-01	-0.669559E-01	0.485218E-01	0.772042E-01
18	0.914[illegible]E-02	-0.49161[illegible]E-02	-0.183352E+00	0.239801E-01	0.554003E-01	0.914891E-02	-0.421515E-01	0.737179E-01
19	[illegible]	0.127576E-02	-0.325548E+00	0.421197E+00	0.[illegible]4572[illegible]E-02	0.114214E-01	0.246228E-01	0.144536E+00
20	0.[illegible]97[illegible]E-03	0.978[illegible]E-03	0.526105E+00	0.172496E+01	-0.2023[illegible]E-02	0.333102E-02	0.401441E+00	0.153613E+00

n	Z=(10 , 1) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	Z=(10 , 2) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.918[illegible]E-01	-0.69[illegible]E-01	0.12185[illegible]E+00	-0.761198E-01	-0.[illegible]33822E+00	-0.253[illegible]E+00	0.255590E+00	-0.250427E+00
1	0.111[illegible]E+00	-0.[illegible]E-01	0.101191E+00	0.805767E-01	0.230169E+00	-0.269858E+00	0.276044E+00	0.224060E+00
2	0.123785E+00	0.610[illegible]E-01	-0.222[illegible]E-01	0.909587E-01	0.367679E+00	0.161733E+00	-0.173035E+00	0.299136E+00
3	-0.4755[illegible]E-01	0.1031[illegible]E+00	-0.148214E+00	-0.231951E-01	-0.725945E-01	0.318045E+00	-0.330471E+00	-0.636146E-01
4	-0.1499[illegible]E+00	0.172111[illegible]-01	-0.122239E-01	-0.106574E+00	-0.313927E+00	0.620877E-01	-0.579610E-01	-0.297467E+00
5	-0.887[illegible]E-01	-0.7[illegible]E-01	0.122410E+00	-0.656413E-01	-0.188832E+00	-0.210008E+00	0.223827E+00	-0.183777E+00
6	0.492237E-01	-0.9[illegible]011E-01	0.132258E+00	0.217518E-01	0.7030[illegible]6E-01	-0.244342E+00	0.261114E+00	0.546817E-01
7	0.134892E+00	-0.487072E-01	0.791175E-01	0.757658E-01	0.215127E+00	-0.112996E+00	0.111235E+00	0.186851E+00
8	0.148372E+00	0.233[illegible]E-02	-0.[illegible]E-01	0.819919E-01	0.207281E+00	0.195112E-01	-0.467789E-01	0.182728E+00
9	0.107[illegible]E+00	0.284101E-01	-0.112619E+00	0.689465E-01	0.130173E+00	0.767646E-01	-0.127963E+00	0.127132E+00
10	0.6400[illegible]E-01	0.3[illegible]671E-01	-0.155517E+00	0.603276E-01	0.534844E-01	0.782635E-01	-0.140548E+00	0.96287[illegible]E-01
11	0.5183[illegible]E-01	0.224[illegible]E-01	-0.2[illegible]E+00	0.107125E+00	0.175590E-01	0.477646E-01	-0.116950E+00	0.12403[illegible]E+00
12	0.136046E-01	0.1362[illegible]E-01	-0.219275E+00	[illegible].221740E+00	0.145471E-02	0.243023E-01	-0.632209E-01	0.229793E+00
13	0.[illegible]E-02	0.[illegible]E-02	-0.[illegible]	0.30[illegible]874E+00	-0.227816E-02	0.1[illegible]4057E-01	0.754541E-01	0.458727E+00
14	0.164879E-02	0.277820E-02	-0.748257[illegible]	0.125758E+01	-0.193762E-02	0.377030E-02	0.497296E+00	0.921934E+00
15	0.45610[illegible]E-03	0.107[illegible]E-02	-0.190970[illegible]01	0.331444E+01	-0.102686E-02	0.115958E-02	0.182540E+01	0.183477E+01
16	[illegible]	0.[illegible]E-03	-0.20315[illegible]E+01	0.939668E+01	-0.431938E-03	0.297817E-03	0.603762E+01	0.343684E+01
17	[illegible]	0.12[illegible]	-0.[illegible]609E+01	0.270278E+02	-0.154709E-03	0.595287E-04	0.195275E+02	0.530885E+01
18	[illegible]	0.339[illegible]E-04	0.607174E+00	0.865930E+02	-0.486490E-04	0.665035E-05	0.632530E+02	0.126392E+01
19	[illegible]	0.990[illegible]E-05	0.87[illegible]E+02	0.295399E+03	-0.136376E-04	-0.125312E-05	0.206407E+03	-0.433189E+02
20	[illegible]	0.2[illegible]449[illegible]E-05	0.260[illegible]E+03	0.101123E+04	-0.343169E-05	-0.112137E-05	0.676403E+03	-0.327896E+03

n	Z=(10 , 3) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	Z=(10 , 4) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.755829E+00	-0.620426E+00	0.625001E+00	-0.722494E+00	-0.207030E+01	-0.146170E+01	0.146337E+01	-0.206998E+01
1	0.540[illegible]E+00	-0.769216E+00	0.771068E+00	0.535620E+00	0.123449E+01	-0.212459E+01	0.212508E+01	0.123279E+01
2	0.319[illegible]05E+00	0.364975E+00	-0.365[illegible]E+00	0.816261E+00	0.216978E+01	0.784529E+00	-0.786247E+00	0.216896E+01
3	-0.1147[illegible]E+00	0.823502E+00	-0.827719E+00	-0.110826E+00	-0.168975E+00	0.208565E+01	-0.209002E+01	-0.162332E+00
4	-0.734150E+00	0.186890E+00	-0.185[illegible]E+00	-0.728035E+00	-0.176457E+01	0.515445E+00	-0.514155E+00	-0.176244E+01
5	-0.445122E+00	-0.487336E+00	0.495107E+00	-0.441657E+00	-0.104512E+01	-0.114111E+01	0.114414E+01	-0.104551E+01
6	0.137402E+00	-0.543935E+00	0.549430E+00	0.129425E+00	0.340670E+00	-0.120111E+01	0.120254E+01	0.337019E+00
7	0.414377E+00	-0.210556E+00	0.296400E+00	0.402481E+00	0.888487E+00	-0.357670E+00	0.354614E+00	0.884133E+00
8	0.345914E+00	0.831060E-01	-0.991732E-01	0.339143E+00	0.622283E+00	0.279089E+00	-0.286681E+00	0.622835E+00
9	0.164907E+00	0.178321E+00	-0.202[illegible]E+00	0.172911E+00	0.188447E+00	0.401262E+00	-0.409640E+00	0.196696E+00
10	0.[illegible]2294E-01	0.141964E+00	-0.163503E+00	0.661299E-01	-0.716745E-01	0.254736E+00	-0.255411E+00	-0.322755E-01
11	-0.179521E-01	0.759866E-01	-0.727911E-01	0.521350E-01	-0.975311E-01	0.973176E-01	-0.761139E-01	-0.701736E-01
12	-0.229991E-01	0.297333E-01	0.430899E-01	0.892245E-01	-0.645232E-01	0.155733E-01	0.388493E-01	-0.464955E-01
13	-0.143352E-01	0.824701E-02	0.233014E+00	0.122259E+00	-0.281024E-01	-0.813106E-02	0.141291E+00	-0.721360E-01
14	-0.653252E-02	0.837740E-03	0.624934E+00	0.401623E-01	-0.845771E-02	-0.833476E-02	0.212865E+00	-0.252954E+00
15	-0.236722E-02	-0.577534E-03	0.146200E+01	-0.513424E+00	-0.137668E-02	-0.424312E-02	0.137918E+00	-0.773114E+00
16	-0.692716E-03	-0.470587E-03	0.309198E+01	-0.274806E+01	0.237547E-03	-0.154656E-02	-0.670723E+00	-0.196056E+01
17	-0.157391E-03	-0.217999E-03	0.541218E+01	-0.100174E+02	0.292816E-03	-0.421[illegible]E-03	-0.427699E+01	-0.494110E+01
18	-0.226755E-04	-0.777941E-04	0.405578E+01	-0.368581E+02	0.137474E-03	-0.78228[illegible]E-04	-0.171112E+02	-0.507052E+01
19	0.[illegible]0477E-05	-0.229822E-04	-0.283728E-02	-0.117569E+03	0.458706E-04	-0.361326E-05	-0.567710E+02	0.969937E+01
20	0.251674E-05	-0.578[illegible]E-05	-0.233[illegible]E+03	-0.353252E+03	0.118866E-04	0.439270E-05	-0.160713E+03	0.114026E+03

n	Z=(10 , 5) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	Z=(10 , 6) REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.672[illegible]E+01	-0.[illegible]35607E+01	0.336[illegible]E+01	-0.372915E+01	-0.155[illegible]E+02	-0.760362E+01	0.760383E+01	-0.153359E+02
1	0.277[illegible]E+01	-0.376062E+01	0.375674E+01	0.277379E+01	0.612653E+01	-0.154096E+02	0.154096E+02	0.612581E+01
2	0.569466E+01	0.165039E+01	-0.165124E+01	0.569457E+01	0.148478E+02	0.339364E+01	-0.339388E+01	0.148477E+02
3	-0.166574E+00	0.523196E+01	-0.523232E+01	-0.165719E+00	0.813062E-01	0.133820E+02	-0.133821E+02	0.815515E-01
4	-0.430903E+01	0.135336E+01	-0.135326E+01	-0.430832E+01	-0.106722E+02	0.346906E+01	-0.346880E+01	-0.106730E+02
5	-0.244674E+01	-0.275587E+01	0.275698E+01	-0.244910E+01	-0.576704E+01	-0.684843E+01	0.684881E+01	-0.576724E+01
6	0.941557E+00	-0.270158E+01	0.270129E+01	0.946045E+00	0.268329E+01	-0.620952E+01	0.620947E+01	0.268163E+01
7	0.262314E+01	-0.543377E+00	0.541720E+00	0.262181E+01	0.477244E+01	-0.627177E+00	0.626429E+00	0.477211E+01
8	0.116019E+01	0.835640E+00	-0.838654E+00	0.116109E+01	0.216348E+01	0.235954E+01	-0.236054E+01	0.216419E+01
9	0.122948E+00	0.590921E+00	-0.592748E+00	0.127562E+00	-0.296455E+00	0.195400E+01	-0.195397E+01	-0.296473E+00
10	-0.396207E+00	0.425119E+00	-0.421375E+00	-0.387087E+00	-0.942493E+00	0.620468E+00	-0.617778E+00	-0.940494E+00
11	-0.268475E+00	0.720925E-01	-0.576785E-01	-0.255636E+00	-0.582040E+00	-0.122733E+00	0.123705E+00	-0.583407E+00
12	-0.122262E+00	-0.300717E-01	0.772[illegible]E-01	-0.184117E+00	-0.166377E+00	-0.237432E+00	0.243454E+00	-0.176748E+00
13	-0.711211E-01	-0.499788E-01	0.781665E-01	-0.8[illegible]910E-01	0.143269E-01	-0.100218E+00	0.123678E+00	-0.100138E-01
14	0.106[illegible]E-02	-0.242609E-01	-0.231598E-02	-0.183369E+00	0.397075E-01	-0.301556E-01	-0.944779E-02	0.930721E-02
15	0.[illegible]45507E-02	-0.753161E-02	-0.249637E+00	-0.220593E+00	0.215338E-01	-0.194539E-02	-0.132116E+00	0.419476E-01
16	0.[illegible]0861E-02	-0.123431E-02	-0.387821E+00	-0.131761E+00	0.676025E-02	0.428924E-02	-0.224331E+00	0.266997E+00
17	0.[illegible]0612E-02	0.195320E-03	-0.[illegible]27414E+01	0.105467E+01	0.962706E-03	0.257650E-02	-0.477626E-01	0.947072E+00
18	0.[illegible]67[illegible]E-03	0.264252E-03	-0.[illegible]0324E+01	0.636368E+01	-0.244285E-03	0.863921E-03	0.157380E+01	0.224407E+01
19	0.[illegible]E-04	0.101164E-03	-0.[illegible]E+00	0.283253E+02	-0.217076E-03	0.172630E-03	0.799254E+01	0.258912E+01
20	-0.629797E-05	0.293429E-0[illegible]	0.396170E+02	0.672529E+02	-0.811819E-04	0.461290E-05	0.258068E+02	-0.857126E+01

Z=(10 , 7)

Z=(10 , 8)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	-0.[illegible]E+02	[illegible]	[illegible]	-0.[illegible]E+03	-0.[illegible]E+03	-0.[illegible]E+02	0.8[illegible]E+02	-0.[illegible]E+03
1	[illegible]	-0.[illegible]E+02	[illegible]	[illegible]	[illegible]	-0.[illegible]E+03	0.[illegible]E+03	0.[illegible]E+02
2	[illegible]	0.6777[illegible]E+01	[illegible]	0.[illegible]E+02	0.[illegible]E+02	0.[illegible]E+02	-0.[illegible]E+02	0.[illegible]E+02
3	0.[illegible]E+01	0.3[illegible]E+02	[illegible]	[illegible]	0.[illegible]E+01	0.[illegible]E+02	-0.[illegible]E+02	0.[illegible]E+01
4	-0.[illegible]E+0[illegible]	0.8[illegible]	[illegible]	-0.2[illegible]E+02	-0.[illegible]E+02	0.[illegible]E+02	-0.[illegible]E+02	-0.[illegible]E+02
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Z=([illegible] , 9)

Z=(10 , 10)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Jn(Z)]	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.162473E+03	-0.761516E+02
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.731659E+02	0.116263E+03
2	[illegible]	0.[illegible]E+02	-0.[illegible]E+02	[illegible]	[illegible]	[illegible]	-0.352838E+02	0.669307E+03
3	[illegible]	[illegible]	-0.[illegible]	[illegible]	[illegible]	[illegible]	-0.573153E+03	0.598792E+02
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.144362E+03	-0.447746E+03
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.306704E+03	-0.196402E+03
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.205028E+03	0.171038E+03
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.622617E+02	0.174303E+03
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.109993E+03	0.638099E+01
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.351509E+02	-0.666325E+02
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.248535E+02	-0.357275E+02
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.237466E+02	0.240675E+01
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.521035E+01	0.111847E+02
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.325493E+01	0.566146E+01
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.277155E+01	0.423813E-01
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.702074E+00	-0.981556E+00
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.159018E+00	0.161721E+00
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.184211E+00	-0.699873E-01
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.381705E-01	0.307292E-01
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.567439E-01	0.562222E-01
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.[illegible]E-02	-0.[illegible]E-01

APPENDIX B

Tables of $j_n(z)$ and $y_n(z)$ for some extreme values of order and argument

The following tables list values of $j_n(z)$ and $y_n(z)$ for certain extreme values of order and argument. Some question may arise as to the validity of the procedure outlined in Section II for computing functional values when the real and imaginary parts of the argument are of very different order of magnitude (for example, when $z = 10^3 + 10^{-3}i$). However, no difficulty arises even in such an extreme case. This is due to the fact that the recurrence relations were always initiated at a sufficiently large order m such that the real and imaginary parts of the largest desired order N of $j_n(z)$ were both seven orders of magnitude greater than the corresponding assumed starting values for $j_m(z)$. This is all that is required for the iteration process to result in the required number of accurate digits. No limitations exist on the accuracy of the normalizing functions which were analyzed in such cases by expressions similar to Eq. (10). Once again, the infinite series representation of sinz and cosz were used for cases in which $|z|$ is very small. Similarly, when the real part of z exceeded 2π, the procedure discussed in connection with Eqs. (11) was used prior to invoking the appropriate FORTRAN functions.

Z=(1000.000, 50.000)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.221093E+19	0.134734E+19	-0.134734E+19	0.221093E+19
1	-0.134507E+19	0.221216E+19	-0.221216E+19	-0.134507E+19
2	-0.221462E+19	-0.134052E+19	0.134052E+19	-0.221462E+19
3	0.133369E+19	-0.221830E+19	0.221830E+19	0.133369E+19
4	0.222316E+19	0.132456E+19	-0.132456E+19	0.222316E+19
5	-0.131313E+19	0.222919E+19	-0.222919E+19	-0.131313E+19
6	-0.223635E+19	-0.129938E+19	0.129938E+19	-0.223635E+19
7	0.128329E+19	-0.224459E+19	0.224459E+19	0.128329E+19
8	0.225367E+19	0.126494E+19	-0.126494E+19	0.225367E+19
9	-0.124400E+19	0.226413E+19	-0.226413E+19	-0.124400E+19
10	-0.227530E+19	-0.122075E+19	0.122075E+19	-0.227530E+19
11	0.119506E+19	-0.228732E+19	0.228732E+19	0.119506E+19
12	0.230010E+19	0.116690E+19	-0.116690E+19	0.230010E+19
13	-0.113624E+19	0.231355E+19	-0.231355E+19	-0.113624E+19
14	-0.232758E+19	-0.110306E+19	0.110306E+19	-0.232758E+19
15	0.106732E+19	-0.234009E+19	0.234009E+19	0.106732E+19
16	0.235697E+19	0.102898E+19	-0.102898E+19	0.235697E+19
17	-0.988036E+18	0.237202E+19	-0.237202E+19	-0.988036E+18
18	-0.238732E+19	-0.944444E+18	0.944444E+18	-0.238732E+19
19	0.898183E+18	-0.240254E+19	0.240254E+19	0.898183E+18
20	0.241759E+19	0.849232E+18	-0.849232E+18	0.241759E+19
21	-0.797573E+18	0.243292E+19	-0.243292E+19	-0.797573E+18
22	-0.244668E+19	-0.743192E+18	0.743192E+18	-0.244668E+19
23	0.686602E+18	-0.245019E+19	0.245019E+19	0.686602E+18
24	0.247296E+19	0.636213E+18	-0.636213E+18	0.247296E+19
25	-0.568679E+18	0.246476E+19	-0.246476E+19	-0.568679E+18
26	-0.249534E+19	-0.529456E+18	0.529456E+18	-0.249534E+19
27	0.480[illegible]E+18	-0.250451E+19	0.250451E+19	0.480[illegible]E+18
28	0.251208E+19	0.[illegible]E+18	-0.259817E+18	0.251208E+19
29	-0.286584E+18	[illegible]	-0.251783E+19	-0.286584E+18
30	-0.252154E+19	[illegible]	0.210723E+18	-0.252154E+19
31	0.132512E+18	-0.[illegible]	0.[illegible]	0.132512E+18
32	0.252194E+19	0.[illegible]	-0.[illegible]	0.252194E+19
33	0.311739E+17	0.[illegible]	-0.251817E+19	0.311739E+17
34	-0.251144E+19	[illegible]	-0.[illegible]	-0.251144E+19
35	-0.20[illegible]	-0.250152E+19	0.250152E+19	-0.205630E+18
36	0.248316E+19	-0.202811E+18	0.202811E+18	0.248316E+19
37	0.383746E+18	0.247113E+19	-0.247113E+19	0.383746E+18
38	-0.245021E+19	0.476[illegible]E+18	-0.476[illegible]E+18	-0.245021E+19
39	-0.570112E+18	-0.243515E+19	0.243515E+19	-0.570112E+18
40	0.239573E+19	-0.663[illegible]E+18	0.6[illegible]E+18	0.239573E+19
41	0.760995E+18	0.236[illegible]E+19	-0.236[illegible]E+19	0.760995E+18
42	-0.232[illegible]E+19	0.85[illegible]E+18	-0.837[illegible]E+18	-0.2[illegible]E+19
43	-0.954[illegible]E+18	-0.[illegible]E+19	0.[illegible]E+19	-0.954[illegible]E+18
44	0.[illegible]E+19	-0.[illegible]E+19	0.[illegible]E+19	0.[illegible]E+19
45	0.114765E+19	0.[illegible]E+19	-0.[illegible]E+19	0.114765E+19
46	-0.[illegible]E+19	0.[illegible]E+19	-0.[illegible]E+19	-0.[illegible]E+19
47	-0.[illegible]E+19	-0.[illegible]E+19	0.[illegible]E+19	-0.[illegible]E+19
48	0.[illegible]E+19	-0.[illegible]E+19	0.[illegible]E+19	0.[illegible]E+19
49	0.[illegible]E+19	0.[illegible]E+19	-0.[illegible]E+19	0.[illegible]E+19
50	-0.[illegible]E+19	0.[illegible]E+19	-0.[illegible]E+19	-0.[illegible]E+19
51	-0.[illegible]E+19	-0.[illegible]E+19	0.[illegible]E+19	-0.[illegible]E+19
52	0.[illegible]E+19	-0.[illegible]E+19	0.[illegible]E+19	0.[illegible]E+19
53	0.[illegible]E+19	0.[illegible]E+19	-0.[illegible]E+19	0.[illegible]E+19
54	-0.[illegible]E+19	0.[illegible]E+19	-0.[illegible]E+19	-0.[illegible]E+19
55	-0.[illegible]E+19	-0.[illegible]E+19	0.[illegible]E+19	-0.[illegible]E+19

56	0.120048E+19	-0.206981E+19	0.206981E+19	0.120048E+19
57	0.212872E+19	0.107781E+19	-0.107781E+19	0.212872E+19
58	-0.950110E+18	0.218124E+19	-0.218124E+19	-0.950110E+18
59	-0.222687E+19	-0.817695E+18	0.817695E+18	-0.222687E+19
60	0.680919E+18	-0.226509E+19	0.226509E+19	0.680920E+18
61	0.229539E+19	0.540193E+18	-0.540193E+18	0.229539E+19
62	-0.395977E+18	0.231729E+19	-0.231729E+19	-0.395977E+18
63	-0.233032E+19	-0.248786E+18	0.248786E+18	-0.233032E+19
64	0.991888E+17	-0.233404E+19	0.233404E+19	0.991889E+17
65	0.232806E+19	-0.521930E+17	0.521928E+17	0.232806E+19
66	0.204686E+18	0.231201E+19	-0.231201E+19	0.204686E+18
67	-0.228557E+19	0.357566E+18	-0.357566E+18	-0.228557E+19
68	-0.510061E+18	-0.224847E+19	0.224847E+19	-0.510061E+18
69	0.220050E+19	-0.661353E+18	0.661353E+18	0.220050E+19
70	0.810583E+18	0.214152E+19	-0.214152E+19	0.810583E+18
71	-0.207144E+19	0.956854E+18	-0.956853E+18	-0.207144E+19
72	-0.109924E+19	-0.199025E+19	0.199025E+19	-0.109923E+19
73	0.189805E+19	-0.128677E+19	0.128677E+19	0.189805E+19
74	0.136849E+19	0.179499E+19	-0.179499E+19	0.136849E+19
75	-0.168132E+19	0.149339E+19	-0.149339E+19	-0.168132E+19
76	-0.161048E+19	-0.155739E+19	0.155739E+19	-0.161048E+19
77	0.142364E+19	-0.171878E+19	0.171878E+19	0.142364E+19
78	0.181731E+19	0.128063E+19	-0.128063E+19	0.181731E+19
79	-0.112901E+19	0.190511E+19	-0.190511E+19	-0.112901E+19
80	-0.198127E+19	-0.969522E+18	0.969522E+18	-0.198127E+19
81	0.803084E+18	-0.204491E+19	0.204491E+19	0.803084E+18
82	0.209521E+19	0.630505E+18	-0.630505E+18	0.209521E+19
83	-0.452998E+18	0.213144E+19	-0.213144E+19	-0.452997E+18
84	-0.215292E+19	-0.271670E+18	0.271670E+18	-0.215292E+19
85	0.877717E+17	-0.215909E+19	0.215909E+19	0.877715E+17
86	0.214948E+19	-0.973621E+17	0.973622E+17	0.214948E+19
87	0.282320E+18	0.212374E+19	-0.212374E+19	0.282321E+18
88	-0.208166E+19	0.465626E+18	-0.465626E+18	-0.208166E+19
89	-0.645745E+18	-0.202315E+19	0.202315E+19	-0.645745E+18
90	0.194830E+19	-0.821102E+18	0.821102E+18	0.194830E+19
91	0.990094E+18	0.185732E+19	-0.185732E+19	0.990094E+18
92	-0.175061E+19	0.115111E+19	-0.115111E+19	-0.175061E+19
93	-0.130253E+19	-0.162874E+19	0.162874E+19	-0.130253E+19
94	0.149245E+19	-0.144277E+19	0.144277E+19	0.149245E+19
95	0.157030E+19	0.134267E+19	-0.134267E+19	0.157030E+19
96	-0.118038E+19	0.168362E+19	-0.168362E+19	-0.118038E+19
97	-0.178136E+19	-0.100717E+19	0.100717E+19	-0.178136E+19
98	0.824189E+18	-0.185221E+19	0.185221E+19	0.824189E+18
99	0.192502E+19	0.633137E+18	-0.633136E+18	0.192502E+19
100	-0.435781E+18	0.196878E+19	-0.196878E+19	-0.435781E+18

Z=(1000.000, 0.001)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.826830E-03	0.561552E-06	-0.562379E-03	0.827442E-06
1	-0.561552E-03	0.828000E-06	-0.827442E-03	-0.560724E-06
2	-0.828563E-03	-0.559067E-06	0.559397E-03	-0.829122E-06
3	0.557410E-03	-0.830794E-06	0.830242E-03	0.556576E-06
4	0.852466E-03	0.553247E-06	-0.554085E-03	0.833012E-06
5	-0.549917E-03	0.835766E-06	-0.835229E-03	-0.549074E-06
6	-0.838316E-03	-0.544048E-06	0.544898E-03	-0.839043E-06
7	0.539017E-03	-0.842827E-06	0.842312E-03	0.538159E-06
8	0.846601E-03	0.531897E-06	-0.532263E-03	0.847102E-06
9	-0.524625E-03	0.851847E-06	-0.851361E-03	-0.523749E-06
10	-0.856569E-03	-0.515202E-06	0.516087E-03	-0.857027E-06
11	0.506637E-03	-0.862648E-06	0.862199E-03	0.505741E-06
12	0.868221E-03	0.495350E-06	-0.496257E-03	0.868650E-06
13	-0.484931E-03	0.875010E-06	-0.874605E-03	-0.484012E-06
14	-0.881314E-03	-0.471711E-06	0.472642E-03	-0.881694E-06
15	0.459378E-03	-0.888664E-06	0.888312E-03	0.458429E-06
16	0.895555E-03	0.444148E-06	-0.445105E-03	0.895878E-06
17	-0.429820E-03	0.903291E-06	-0.903000E-03	-0.428851E-06
18	-0.910599E-03	-0.412510E-06	0.413509E-03	-0.910856E-06
19	0.396127E-03	-0.918891E-06	0.918300E-03	0.395134E-06
20	0.926077E-03	0.376680E-06	-0.377686E-03	0.926231E-06
21	-0.358160E-03	0.933927E-06	-0.933735E-03	-0.357140E-06
22	-0.941448E-03	-0.335506E-06	0.337583E-03	-0.941548E-06
23	0.315794E-03	-0.949027E-06	0.949070E-03	0.314738E-06
24	0.956291E-03	0.291837E-06	-0.292932E-03	0.956297E-06
25	-0.268936E-03	0.963223E-06	-0.963327E-03	-0.267852E-06
26	-0.970097E-03	-0.242746E-06	0.243302E-03	-0.969910E-06
27	0.217726E-03	-0.976097E-06	0.976249E-03	0.216467E-06
28	0.981970E-03	0.189049E-06	-0.196102E-03	0.981762E-06
29	-0.161558E-03	0.986817E-06	-0.986885E-03	-0.160496E-06
30	-0.991502E-03	-0.139317E-06	0.131870E-03	-0.991173E-06
31	0.101072E-03	-0.994736E-06	0.995129E-03	0.100026E-06
32	0.997870E-03	0.681425E-07	-0.691770E-04	0.997412E-06
33	-0.862102E-04	0.999101E-06	-0.999686E-03	-0.871897E-07
34	-0.100030E-02	-0.120942E-06	0.220209E-05	-0.999702E-06
35	-0.328102E-04	-0.999114E-06	0.999777E-03	-0.337899E-07
36	0.997965E-03	-0.697362E-07	0.687821E-04	0.997232E-06
37	0.105662E-03	0.993951E-06	-0.994756E-03	0.106583E-06
38	-0.991442E-03	0.144275E-06	-0.145897E-03	-0.989164E-06
39	-0.181905E-03	-0.982765E-06	0.983716E-03	-0.182737E-06
40	0.975322E-03	-0.221899E-06	0.221102E-03	0.974650E-06
41	0.266024E-03	0.964712E-06	-0.965806E-03	0.261656E-06
42	-0.953915E-03	0.301940E-06	-0.301264E-03	-0.952852E-06
43	-0.342016E-03	-0.938966E-06	0.949129E-03	-0.342633E-06
44	0.924260E-03	-0.383509E-06	0.383062E-03	0.922061E-06
45	0.424275E-03	0.904742E-06	-0.906106E-03	0.424742E-06
46	-0.885651E-03	0.465902E-06	-0.466517E-03	-0.881227E-06
47	-0.506640E-03	-0.861331E-06	0.862813E-03	-0.506932E-06
48	0.837529E-03	-0.547680E-06	0.547481E-03	0.839868E-06
49	0.587890E-03	0.803125E-06	-0.809707E-03	0.587970E-06
50	-0.779329E-03	0.627626E-06	-0.627643E-03	-0.777697E-06
51	-0.666591E-03	-0.744456E-06	0.746315E-03	-0.664548E-06
52	0.710661E-03	-0.704257E-06	0.704516E-03	0.708977E-06
53	0.741210E-03	0.672634E-06	-0.672341E-03	0.740822E-06
54	-0.681852E-03	0.775926E-06	-0.776475E-03	-0.629658E-06
55	-0.810928E-03	-0.585903E-06	0.587707E-03	-0.899358E-06

56	0.541438E-03	-0.840890E-06	0.841692E-03	0.539730E-06
57	0.871210E-03	0.490907E-06	-0.492596E-03	0.870262E-06
58	-0.441249E-03	0.897245E-06	-0.898340E-03	-0.439594E-06
59	-0.922836E-03	-0.385877E-06	0.387490E-03	-0.921590E-06
60	0.331432E-03	-0.943054E-06	0.944452E-03	0.329878E-06
61	0.962940E-03	0.271728E-06	-0.273211E-03	0.961391E-06
62	-0.212990E-03	0.976358E-06	-0.978057E-03	-0.211594E-06
63	-0.989563E-03	-0.149636E-06	0.150954E-03	-0.987717E-06
64	0.873156E-04	-0.995239E-06	0.997228E-03	0.861344E-07
65	0.109083E-02	0.212590E-07	-0.223119E-04	0.998700E-06
66	0.437928E-04	0.997893E-06	-0.100015E-02	0.446982E-07
67	-0.995063E-03	0.111454E-06	-0.110708E-03	-0.992622E-06
68	-0.178118E-03	-0.982712E-06	0.985205E-03	-0.178587E-03
69	0.979000E-03	-0.240061E-06	0.245081E-03	0.968007E-06
70	0.313032E-03	0.948375E-06	-0.951055E-03	0.313206E-06
71	-0.926463E-03	0.379738E-06	-0.379780E-03	-0.923711E-06
72	-0.445516E-03	-0.893940E-06	0.896747E-03	-0.445243E-06
73	0.861863E-03	-0.509294E-06	0.509808E-03	0.859021E-06
74	0.572210E-03	0.818947E-06	-0.821805E-03	0.571444E-06
75	-0.776604E-03	0.631232E-06	-0.632257E-03	-0.773753E-06
76	-0.689477E-03	-0.723513E-06	0.726384E-03	-0.688186E-06
77	0.671114E-03	-0.741824E-06	0.743387E-03	0.668350E-06
78	0.793100E-03	0.608427E-06	-0.611109E-03	0.791664E-06
79	-0.546685E-03	0.837222E-06	-0.839331E-03	-0.545968E-06
80	-0.880399E-03	-0.475121E-06	0.477656E-03	-0.878021E-06
81	0.404796E-03	-0.913591E-06	0.916233E-03	0.402525E-06
82	0.946379E-03	0.326246E-06	-0.328310E-03	0.944848E-06
83	-0.248638E-03	0.967265E-06	-0.970404E-03	-0.246796E-06
84	-0.987902E-03	-0.164665E-06	0.166253E-03	-0.984536E-06
85	0.816824E-04	-0.994926E-06	0.998501E-03	0.603811E-07
86	0.106187E-02	-0.548936E-03	0.449147E-05	0.998110E-06
87	0.916411E-04	0.993805E-06	-0.997724E-03	0.922911E-07
88	-0.985833E-03	0.179389E-06	-0.179093E-03	-0.981784E-06
89	-0.266133E-03	-0.961633E-06	0.966024E-03	-0.266035E-06
90	0.938195E-03	-0.351509E-06	0.352012E-03	0.933991E-06
91	0.435947E-03	0.898087E-06	-0.902310E-03	0.435024E-06
92	-0.858416E-03	0.515779E-06	-0.517134E-03	-0.854217E-06
93	-0.594754E-03	-0.802509E-06	0.806640E-03	-0.592958E-06
94	0.747197E-03	-0.665737E-06	0.667976E-03	0.743183E-06
95	0.735977E-03	0.676544E-06	-0.680393E-03	0.733294E-06
96	-0.606526E-03	0.794815E-06	-0.797931E-03	-0.602994E-06
97	-0.853053E-03	-0.523027E-06	0.526392E-03	-0.849517E-06
98	0.440281E-03	-0.896649E-06	0.900578E-03	0.437295E-06
99	0.939788E-03	0.346302E-06	-0.348979E-03	0.935475E-06
100	-0.253263E-03	0.965368E-06	-0.970024E-03	-0.251006E-06

Z=(0.001, 50.000)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.518470E+20	-0.508101E+17	0.508101E+17	0.518470E+20
1	0.498147E+17	0.508101E+20	-0.508101E+20	0.498146E+17
2	-0.487984E+20	0.478322E+17	-0.478322E+17	-0.487984E+20
3	-0.451240E+17	-0.459302E+20	0.459302E+20	-0.451240E+17
4	0.423602E+20	-0.416935E+17	0.416934E+17	0.423602E+20
5	0.377717E+17	0.383040E+20	-0.383040E+20	0.377717E+17
6	-0.339413E+20	0.335522E+17	-0.335522E+17	-0.339413E+20
7	-0.292247E+17	-0.294792E+20	0.294792E+20	-0.292246E+17
8	0.250975E+20	-0.249617E+17	0.249617E+17	0.250975E+20
9	0.209083E+17	0.209461E+20	-0.209461E+20	0.209083E+17
10	-0.171380E+20	0.171757E+17	-0.171757E+17	-0.171380E+20
11	-0.138385E+17	-0.137481E+20	0.137481E+20	-0.138385E+17
12	0.108139E+20	-0.109265E+17	0.109265E+17	0.108139E+20
13	0.847841E+16	0.834112E+19	-0.834113E+19	0.847841E+16
14	-0.630971E+19	0.644821E+16	-0.644821E+16	-0.630971E+19
15	-0.481164E+16	-0.468149E+19	0.468149E+19	-0.481164E+16
16	0.340719E+19	-0.352305E+16	0.352305E+16	0.340719E+19
17	0.253140E+16	0.243275E+19	-0.243275E+19	0.253140E+16
18	-0.170427E+19	0.178512E+16	-0.178512E+16	-0.170427E+19
19	-0.123563E+16	-0.117159E+19	0.117159E+19	-0.123563E+16
20	0.790430E+18	-0.839607E+15	0.839607E+15	0.790430E+18
21	0.560119E+15	0.523435E+18	-0.523435E+18	0.560119E+15	
22	-0.340276E+18	0.366938E+15	-0.366938E+15	-0.340276E+18
23	-0.236027E+15	-0.217165E+18	0.217165E+18	-0.236027E+15
24	0.136121E+18	-0.149135E+15	0.149135E+15	0.136121E+18
25	0.925520E+14	0.837971E+17	-0.837971E+17	0.925520E+14

Z=(0.001, 0.000)

n	REAL[Jn(Z)]	IMAG[Jn(Z)]	REAL[Yn(Z)]	IMAG[Yn(Z)]
0	0.100000E+01	-0.333333E-03	-0.[illegible]E+03	0.500000E+03
1	0.333333E-03	0.333333E-03	-0.500000E+03	0.500000E+03
2	0.214286E-13	0.133235E-06	0.750000E+09	0.750000E+09
3	-0.190476E-19	0.190476E-19	0.375000E+18	0.750000E+09
4	-0.423280E-19	0.492730E-21	0.131250E+17	-0.131250E+17
5	-0.384800E-19	-0.384800E-19	0.131250E+14	-0.118125E+21

END

FILMED

4-83

DTIC