

Tables of Weyl Fractional Integrals for the Airy Function

By N. L. Balazs*, H. C. Pauli and O. B. Dabbousi

Abstract. Functions related to the Weyl fractional integral of the Airy function are tabulated for the 16 lowest orders and for a range of parameters of practical interest. This range, coupled with the asymptotic relations given, covers the entire real axis.

The *objects of interest* are the numerical values and the asymptotic properties of the functions V and W , defined by

$$(1) \quad V(z, n, \nu, m, \mu) = \int_z^\infty dt(t-z)^{n-1} W(t, \nu) W^m(t, \mu),$$

$$(2) \quad W(z, n) = \int_z^\infty dt(t-z)^n \text{Ai}(t)$$

(with $\text{Ai}(x)$ being the Airy function). They were recently needed to study the properties of atomic nuclei and were not available in the literature. Since they are useful in this context, and might be of mathematical interest, we present them here.

In the following we discuss briefly the functions and their asymptotic properties. The numerical tables are given in the microfiche section of this issue.

Each function, V and W , is proportional to a Weyl *fractional integral* [2]. The Weyl fractional integral of an arbitrary function $f(t)$ is defined by

$$(3) \quad h(z, \mu) = \mathfrak{A}\{f(t), z\} = 1/\Gamma(\mu) \int_z^\infty dt(t-z)^{\mu-1} f(t),$$

and has the following simple properties for differentiation and integration,

$$(4) \quad dh(z, \mu)/dz = -h(z, \mu - 1), \quad \int_z^\infty dt h(t, \mu) = h(z, \mu + 1).$$

If the function $f(t)$ itself is a fractional integral, the above transformation acts as a step operator, i.e.

$$(5) \quad \frac{1}{\Gamma(\nu)} \int_z^\infty dt(t-z)^{\nu-1} h(t, \mu) = h(z, \mu + \nu).$$

The definitions (1) and (2) are convenient for physical reasons. The differential and integral relations corresponding to (4) and (5) read then

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$$(6) \quad dW(z, n)/dz = -n W(z, n-1), \quad \int_z^\infty dt W(t, n) = W(z, n+1)/(n+1),$$

$$(7) \quad \int_z^\infty dt (t-z)^n W(t, m) = B(n+1, m+1) W(z, n+m+1),$$

and, correspondingly, for V . The beta function $B(z, w)$ is defined as usual [1]

$$(8) \quad B(z, w) = \Gamma(z)\Gamma(w)/\Gamma(z+w).$$

The integral, Eq. (7), is very similar to the function V ; in particular, $V(z; n, v; 0, \mu) = B(n, v+1) W(z, n+v)$. Therefore, we introduce another function $Z(z, n, v, m, \mu)$, i.e.

$$(9) \quad V(z; n, v; m, \mu) = B(n, v+m\mu+1) W(z, n+v) \cdot W^m(z, \mu) \cdot Z(z; n, v; m, \mu);$$

and as a shorthand notation

$$(10) \quad X(z, n) = Z(z; n, 3/2; 1, 3/2) \quad \text{and} \quad Y(z, n) = Z(z; n, 3/2; 2, 3/2).$$

As we shall see below, the functions X and Y , are of the order of magnitude unity.

The asymptotic behavior of these functions may be obtained by studying their complex integral representation, which is based on the well-known representation of the Airy function

$$(11) \quad \text{Ai}(z) = \frac{1}{2\pi i} \int_C dt e^{-zt+t^3/3}.$$

The contour C is shown in Figure 1. Inserting this into Eq. (1), inverting the order of integration, and making use of the definition of the Γ -function, one finds

$$(12a) \quad W(z, n) = \frac{\Gamma(n+1)}{2\pi i} \int_C \frac{dt}{t^{n+1}} e^{-zt+t^3/3}.$$

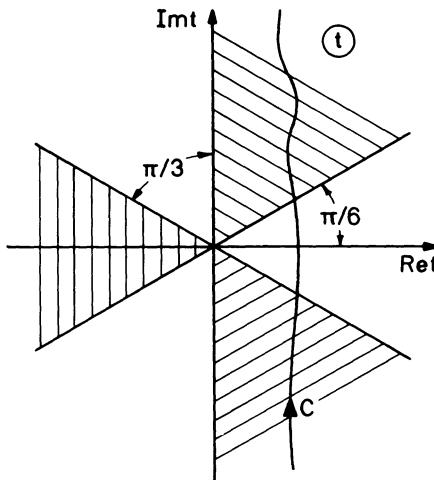


FIGURE 1

The contour C for the integral representation of the Airy function.

In the shaded areas $\text{Re } t^3 < 0$. The contour must end in the indicated triangles.

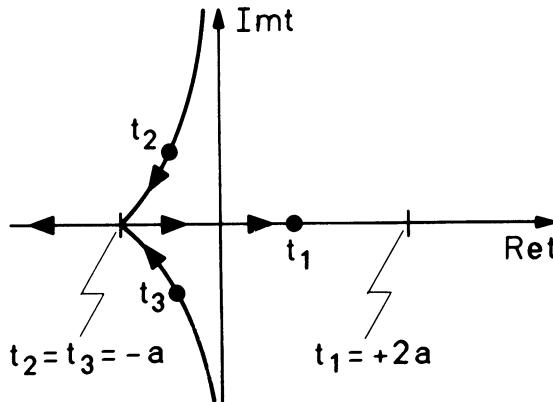


FIGURE 2

The migration of the three saddle points t_1 , t_2 and t_3 for values of $z \sim -\infty$ to $z \sim +\infty$ (\rightarrow).

Similarly, we find, for example,

$$(12b) \quad Z(z; n, \nu; 2, \mu) = \Gamma(n) \frac{\Gamma(\nu + 1)}{2\pi i} \cdot \frac{\Gamma(\mu + 1)}{2\pi i} \cdot \int_C \frac{dt}{t^{\nu+1}} e^{-zt+t^3/3} \int_C \frac{ds}{s^{\mu+1}} \frac{e^{-zs+s^3/3}}{(s+t)^n}.$$

In order to study the function $W(z, n)$, we investigated the pole and saddle point structure of the integrand.

The integrand has a pole of order $(n+1)$ at the origin $t=0$. The saddle points are given by the zero of the function $d\varphi/dz$, where

$$(13) \quad \varphi(n, t; z) = -zt + t^3/3 - (n+1)\ln t.$$

Thus, the saddle points are given by the roots of the cubic

$$(14) \quad -zt + t^3 - (n+1) = 0.$$

Let $n \geq 0$, z real. Then the three roots t_1 , t_2 , t_3 as functions of z are given as follows. t_1 is always real and positive. t_2 , t_3 have always negative real parts. For $z > z_c = 3((n+1)/2)^{2/3}$ all roots are real.

(a) For $z \ll 0$ the complex roots are near the imaginary axis:

$$(15a) \quad t_1 \simeq (n+1)/|z| - (n+1)^3/|z|^4 + \dots,$$

$$(15b) \quad \operatorname{Re} t_2 = \operatorname{Re} t_3 = -(n+1)/(2|z|)(1 - (n+1)^2/|z|^3 + \dots),$$

$$(15c) \quad \operatorname{Im} t_2 = -\operatorname{Im} t_3 = +|z|^{1/2}(1 + 3/8(n+1)^2/|z|^3 + \dots).$$

b) For $z = z_c$: $t_2 = t_3 = -t_1/2$, $t_1 = 2(z_c/3)^{1/2}$.

(c) For $z \gg z_c$:

$$(16a) \quad t_1 = -t_3 = z^{1/2} + (n+1)/(2z) + O(z^{-3/2}),$$

$$(16b) \quad t_2 = -(n+1)/z - (n+1)^3/z^4 + \dots.$$

The integral can be evaluated asymptotically in z using the saddle point approximation. For *large positive* z all contributions come from t_1 , and we obtain

$$(17) \quad W(z, n) = \frac{\Gamma(n+1)}{2\pi^{1/2}} \frac{e^{-2z^{3/2}/3}}{z^{(2n+3)/4}} [1 + O(1/z)].$$

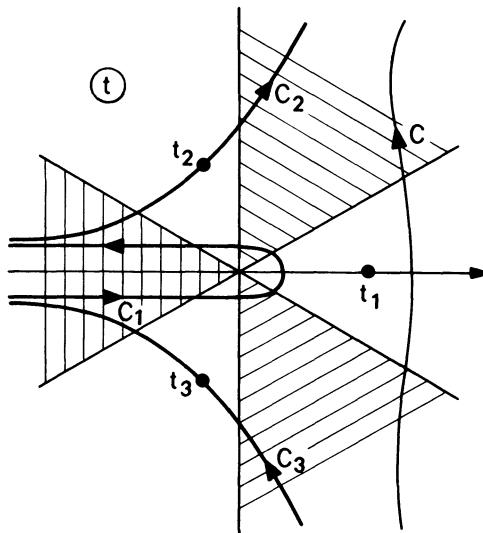


FIGURE 3

The definition of the contours C_1 , C_2 and C_3 .

For *large and negative* z the simple saddle point approximation should be applied only to the contributions from the saddle points at t_2 and t_3 , since in the limit $z \rightarrow -\infty$ the saddle point t_1 pinches the singularity at the origin. Therefore, we deform first the contour in a way indicated in Figure 3 and evaluate separately the contributions from contour C_1 and from contours C_2 and C_3 . For z , large and negative, we rewrite the integral over C_1 as

$$(18) \quad \begin{aligned} & \frac{1}{2\pi i} \int_{C_1} \frac{dt}{t^{n+1}} e^{+|z|t+t^{3/3}} \\ &= |z|^n \frac{1}{2\pi i} \int_{C_1} \frac{du}{u^{n+1}} e^{u+u^{3/(3|z|^3)}} \\ &\sim |z|^n \frac{1}{2\pi i} \int_{C_1} \frac{du}{u^{n+1}} e^u (1 + u^{3/(3|z|^3)} + \dots) \\ &\sim |z|^n / \Gamma(n+1) \{1 + \Gamma(n+1)/(3|z|^3 \Gamma(n+1-3)) + \dots\}. \end{aligned}$$

Here, we use the variable substitution $|z|t = u$ and Hankel's definition of the inverse Γ function [1],

$$\frac{1}{2\pi i} \int_{C_1} \frac{du}{u^n} e^u = 1/\Gamma(n).$$

The contributions from the contours C_2 and C_3 are again evaluated by the saddle point approximation. We finally get

$$(19) \quad W(z, n) = |z|^n \{ 1 + \Gamma(n+1)/(\Gamma(n-2)3|z|^3) + O(|z|^{-6}) \} \\ + \frac{\Gamma(n+1)}{\pi^{1/2}|z|^{(2n+3)/4}} \sin(2|z|^{3/2}/3 - (2n+1)\pi/4) [1 + O(|z|^{-1})].$$

The last relation makes it immediately clear that for large and negative values of z the asymptotic behavior of the Z function is given by

$$(20) \quad Z(z; n, \nu; m, \mu) \rightarrow 1 \quad \text{for } z \ll 0.$$

No simple relation was found for large positive values of z .

The functions $W(z, n)$ are *tabulated* in Tables 1 and 2 for half integer and integer values of n , respectively. In Table 3 the functions $X(z, n)$ and $Y(z, n)$ are given for three integer values of n . The range of z has been so chosen that the tabulated values should overlap with those obtained by asymptotic expansions. Figure 4 shows the first sixteen functions.

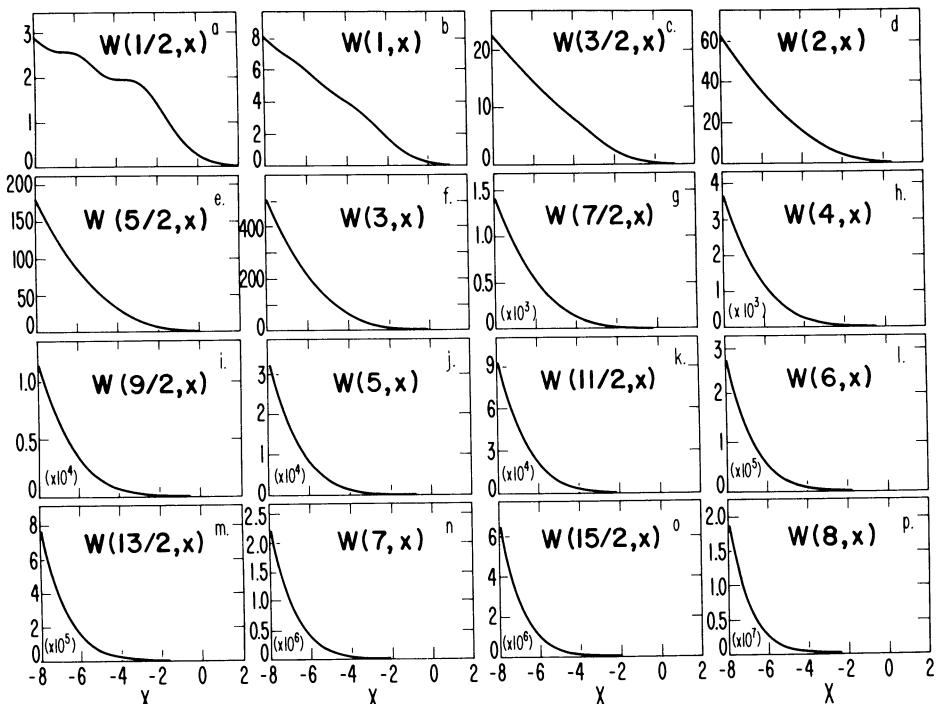


FIGURE 4

The first sixteen $W(n, x)$ functions

The functions have been evaluated by numerical integration of Eqs. (1) and (2). Standard numerical methods were applied, i.e. Gaussian quadratures based on Jacobi- and Legendre-polynomials. The computer codes were tested to yield correct results up to eight digits if the Airy function was replaced by t^n or by e^{-t} . The Airy function was taken from tables [1] and interpolated or asymptotic expansions [1] were used. By checking the code with Eq. (6) an accuracy of at least 5 digits was established.

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N. L. Balazs, H. C. Pauli and O. B. Dabbousi, Table of the Weyl Fractional Integrals for the Airy Function

TABLE 1

Z	$w(z, 1/2)$	$W(z, 3/2)$	$w(z, 5/2)$	$\Psi(z, 7/2)$	$v(z, 9/2)$	$w(z, 11/2)$	$W(z, 13/2)$	$w(z, 15/2)$
-18.0	0.31921e+01	0.11081e+02	0.11435e+03	0.31763e+04	0.12039e+05	0.35527e+06	0.33323e+07	0.34484e+08
-17.9	0.11197e+01	0.31124e+02	0.12059e+03	0.30669e+04	0.10634e+05	0.30813e+06	0.31244e+07	0.32247e+08
-17.8	0.11109e+01	0.31053e+02	0.12086e+03	0.29602e+04	0.10278e+05	0.29186e+06	0.30656e+07	0.31671e+08
-17.7	0.11021e+01	0.30984e+02	0.12117e+03	0.28535e+04	0.10022e+05	0.28571e+06	0.29741e+07	0.31741e+08
-17.6	0.10937e+01	0.29923e+02	0.12057e+03	0.27504e+04	0.97679e+05	0.26089e+06	0.29727e+07	0.25652e+08
-17.5	0.10852e+01	0.29856e+02	0.12086e+03	0.24563e+04	0.95218e+05	0.24218e+06	0.29721e+07	0.25652e+08
-17.4	0.10767e+01	0.29789e+02	0.12117e+03	0.23532e+04	0.92858e+05	0.22582e+06	0.22521e+07	0.22339e+08
-17.3	0.10682e+01	0.29723e+02	0.12148e+03	0.22464e+04	0.90518e+05	0.21978e+06	0.21659e+07	0.20455e+08
-17.2	0.10596e+01	0.29656e+02	0.12179e+03	0.21406e+04	0.88278e+05	0.21417e+06	0.21405e+07	0.19547e+08
-17.1	0.10510e+01	0.29589e+02	0.12210e+03	0.20346e+04	0.86038e+05	0.20856e+06	0.20395e+07	0.18645e+08
-17.0	0.10424e+01	0.29523e+02	0.12241e+03	0.19285e+04	0.83813e+05	0.19317e+06	0.19334e+07	0.17745e+08
-16.9	0.10338e+01	0.29457e+02	0.12272e+03	0.18224e+04	0.81603e+05	0.17731e+06	0.17442e+07	0.16845e+08
-16.8	0.10252e+01	0.29391e+02	0.12303e+03	0.17160e+04	0.79403e+05	0.16152e+06	0.16152e+07	0.15945e+08
-16.7	0.10166e+01	0.29325e+02	0.12334e+03	0.16096e+04	0.77203e+05	0.14573e+06	0.14284e+07	0.14742e+08
-16.6	0.10080e+01	0.29259e+02	0.12365e+03	0.15032e+04	0.75003e+05	0.13004e+06	0.13004e+07	0.13643e+08
-16.5	0.99914e+01	0.29193e+02	0.12396e+03	0.13968e+04	0.72803e+05	0.11435e+06	0.11192e+07	0.11030e+08
-16.4	0.98948e+01	0.29127e+02	0.12427e+03	0.12904e+04	0.70603e+05	0.10000e+06	0.10306e+07	0.7539e+07
-16.3	0.97982e+01	0.29061e+02	0.12458e+03	0.11840e+04	0.68403e+05	0.86700e+05	0.86700e+06	0.9350e+07
-16.2	0.96916e+01	0.28995e+02	0.12489e+03	0.10776e+04	0.66203e+05	0.73300e+05	0.73300e+06	0.8529e+07
-16.1	0.95850e+01	0.28929e+02	0.12520e+03	0.97120e+04	0.64003e+05	0.60000e+05	0.60000e+06	0.7474e+07
-16.0	0.94784e+01	0.28863e+02	0.12551e+03	0.86474e+04	0.61803e+05	0.56800e+05	0.56800e+06	0.6925e+07
-15.9	0.93718e+01	0.28797e+02	0.12582e+03	0.75828e+04	0.59603e+05	0.53600e+05	0.53600e+06	0.6475e+07
-15.8	0.92652e+01	0.28731e+02	0.12613e+03	0.65182e+04	0.57403e+05	0.50400e+05	0.50400e+06	0.6025e+07
-15.7	0.91586e+01	0.28665e+02	0.12644e+03	0.54536e+04	0.55203e+05	0.47200e+05	0.47200e+06	0.5575e+07
-15.6	0.90520e+01	0.28600e+02	0.12675e+03	0.43890e+04	0.53003e+05	0.44000e+05	0.44000e+06	0.5125e+07
-15.5	0.89454e+01	0.28534e+02	0.12706e+03	0.33244e+04	0.50803e+05	0.40800e+05	0.40800e+06	0.4675e+07
-15.4	0.88388e+01	0.28468e+02	0.12737e+03	0.22598e+04	0.48603e+05	0.37600e+05	0.37600e+06	0.4225e+07
-15.3	0.87322e+01	0.28402e+02	0.12768e+03	0.11953e+04	0.46403e+05	0.34400e+05	0.34400e+06	0.3775e+07
-15.2	0.86256e+01	0.28336e+02	0.12800e+03	0.89987e+03	0.44203e+05	0.31200e+05	0.31200e+06	0.3325e+07
-15.1	0.85190e+01	0.28270e+02	0.12831e+03	0.79441e+03	0.42003e+05	0.28000e+05	0.28000e+06	0.2875e+07
-15.0	0.84124e+01	0.28204e+02	0.12862e+03	0.68895e+03	0.39803e+05	0.24800e+05	0.24800e+06	0.2425e+07
-14.9	0.83058e+01	0.28138e+02	0.12893e+03	0.58349e+03	0.37603e+05	0.21600e+05	0.21600e+06	0.2075e+07
-14.8	0.81992e+01	0.28072e+02	0.12924e+03	0.47793e+03	0.35403e+05	0.18400e+05	0.18400e+06	0.1725e+07
-14.7	0.80926e+01	0.28006e+02	0.12955e+03	0.37247e+03	0.33203e+05	0.15200e+05	0.15200e+06	0.1375e+07
-14.6	0.79860e+01	0.27940e+02	0.12986e+03	0.26691e+03	0.31003e+05	0.12000e+05	0.12000e+06	0.1025e+07
-14.5	0.78794e+01	0.27874e+02	0.13017e+03	0.16145e+03	0.28803e+05	0.88000e+04	0.88000e+05	0.6755e+07
-14.4	0.77728e+01	0.27808e+02	0.13048e+03	0.55938e+02	0.26603e+05	0.56000e+04	0.56000e+05	0.3255e+07
-14.3	0.76662e+01	0.27742e+02	0.13079e+03	0.45392e+02	0.24403e+05	0.23800e+04	0.23800e+05	0.1805e+07
-14.2	0.75596e+01	0.27676e+02	0.13110e+03	0.34846e+02	0.22203e+05	0.21600e+04	0.21600e+05	0.1455e+07
-14.1	0.74530e+01	0.27610e+02	0.13141e+03	0.24299e+02	0.20003e+05	0.19400e+04	0.19400e+05	0.1105e+07
-14.0	0.73464e+01	0.27544e+02	0.13172e+03	0.13753e+02	0.17803e+05	0.17200e+04	0.17200e+05	0.7555e+07
-13.9	0.72398e+01	0.27478e+02	0.13203e+03	0.27297e+01	0.15603e+05	0.15000e+04	0.15000e+05	0.4055e+07
-13.8	0.71332e+01	0.27412e+02	0.13234e+03	0.16751e+01	0.13403e+05	0.12800e+04	0.12800e+05	0.2605e+07
-13.7	0.70266e+01	0.27346e+02	0.13265e+03	0.28205e+00	0.11203e+05	0.10600e+04	0.10600e+05	0.1155e+07
-13.6	0.69200e+01	0.27280e+02	0.13296e+03	0.17354e+00	0.8903e+04	0.8400e+03	0.8400e+04	0.7555e+07
-13.5	0.68134e+01	0.27214e+02	0.13327e+03	0.28798e+00	0.7603e+04	0.7000e+03	0.7000e+04	0.5055e+07
-13.4	0.67068e+01	0.27148e+02	0.13358e+03	0.17547e+00	0.6303e+04	0.5800e+03	0.5800e+04	0.3555e+07
-13.3	0.65902e+01	0.27082e+02	0.13389e+03	0.28001e+00	0.5003e+04	0.4600e+03	0.4600e+04	0.2155e+07
-13.2	0.64836e+01	0.27016e+02	0.13420e+03	0.17645e+00	0.3703e+04	0.3400e+03	0.3400e+04	0.1155e+07
-13.1	0.63770e+01	0.26950e+02	0.13451e+03	0.28499e+00	0.2403e+04	0.2200e+03	0.2200e+04	0.6555e+07
-13.0	0.62704e+01	0.26884e+02	0.13482e+03	0.17343e+00	0.1103e+04	0.1000e+03	0.1000e+04	0.3055e+07
-12.9	0.61638e+01	0.26818e+02	0.13513e+03	0.28957e+00	0.8733e+03	0.8000e+02	0.8000e+03	0.1655e+07
-12.8	0.60572e+01	0.26752e+02	0.13544e+03	0.17187e+00	0.6433e+03	0.6000e+02	0.6000e+03	0.8555e+07
-12.7	0.59506e+01	0.26686e+02	0.13575e+03	0.28611e+00	0.4133e+03	0.4600e+02	0.4600e+03	0.5055e+07
-12.6	0.58440e+01	0.26620e+02	0.13606e+03	0.17055e+00	0.1833e+03	0.3200e+02	0.3200e+03	0.2555e+07
-12.5	0.57374e+01	0.26554e+02	0.13637e+03	0.28189e+00	0.9033e+02	0.2800e+02	0.2800e+03	0.1355e+07
-12.4	0.56308e+01	0.26488e+02	0.13668e+03	0.16933e+00	0.6733e+02	0.2400e+02	0.2400e+03	0.8555e+07
-12.3	0.55242e+01	0.26422e+02	0.13700e+03	0.27473e+00	0.4433e+02	0.2000e+02	0.2000e+03	0.5055e+07
-12.2	0.54176e+01	0.26356e+02	0.13731e+03	0.16777e+00	0.2133e+02	0.1600e+02	0.1600e+03	0.2555e+07
-12.1	0.53110e+01	0.26290e+02	0.13762e+03	0.27611e+00	0.8833e+01	0.1200e+02	0.1200e+03	0.1355e+07
-12.0	0.52044e+01	0.26224e+02	0.13793e+03	0.16555e+00	0.6533e+01	0.8000e+01	0.8000e+02	0.8555e+07
-11.9	0.50978e+01	0.26158e+02	0.13824e+03	0.27945e+00	0.4233e+01	0.5000e+01	0.5000e+02	0.5055e+07
-11.8	0.49912e+01	0.26092e+02	0.13855e+03	0.16499e+00	0.1933e+01	0.3000e+01	0.3000e+02	0.2555e+07
-11.7	0.48846e+01	0.26026e+02	0.13886e+03	0.28289e+00	0.8633e+00	0.1000e+01	0.1000e+02	0.1355e+07
-11.6	0.47780e+01	0.25960e+02	0.13917e+03	0.16943e+00	0.6333e+00	0.7000e+00	0.7000e+01	0.8555e+07
-11.5	0.46714e+01	0.25894e+02	0.13948e+03	0.28723e+00	0.4033e+00	0.4000e+00	0.4000e+01	0.5055e+07
-11.4	0.45648e+01	0.25828e+02	0.13979e+03	0.16587e+00	0.1733e+00	0.2000e+00	0.2000e+01	0.2555e+07
-11.3	0.44582e+01	0.25762e+02	0.14010e+03	0.29517e+00	0.9033e+00	0.1000e+00	0.1000e+01	0.1355e+07
-11.2	0.43516e+01	0.25696e+02	0.14041e+03	0.16351e+00	0.6733e+00	0.7000e+00	0.7000e+01	0.8555e+07
-11.1	0.42450e+01	0.25630e+02	0.14072e+03	0.29245e+00	0.4433e+00	0.4000e+00	0.4000e+01	0.5055e+07
-11.0	0.41384e+01	0.25564e+02	0.14103e+03	0.16205e+00	0.2133e+00	0.2000e+00	0.2000e+01	0.2555e+07
-10.9	0.40318e+01	0.25498e+02	0.14134e+03	0.29139e+00	0.9833e+00	0.1000e+00	0.1000e+01	0.1355e+07
-10.8	0.39252e+01	0.25432e+02	0.14165e+03	0.16069e+00	0.6533e+00	0.7000e+00	0.7000e+01	0.8555e+07
-10.7	0.38186e+01	0.25366e+02	0.14196e+03	0.29033e+00	0.4233e+00	0.4000e+00	0.4000e+01	0.5055e+07
-10.6	0.37120e+01	0.25300e+02	0.14227e+03	0.15933e+00	0.1933e+00	0.2000e+00	0.2000e+01	0.2555e+07
-10.5	0.36054e+01	0.25234e+02	0.14258e+03	0.28967e+00	0.8033e+00	0.1000e+00	0.1000e+01	0.1355e+07
-10.4	0.34988e+01	0.25168e+02	0.14289e+03	0.15897e+00	0.5733e+00	0.6000e+00	0.6000e+01	0.8555e+07
-10.3	0.33922e+01	0.25102e+02	0.14320e+03	0.28901e+00	0.3433e+00	0.4000e+00	0.4000e+01	0.5055e+07
-10.2	0.32856e+01	0.25036e+02	0.14351e+03	0.15831e+00	0.2133e+00	0.2000e+00	0.2000e+01	0.2555e+07
-10.1	0.31790e+01	0.24970e+02	0.14382e+03	0.28835e+00	0.8833e+00	0.1000e+00	0.1000e+01	0.1355e+07
-10.0	0.30724e+01	0.24904e+02	0.14413e+03	0.15767e+00	0.6533e+00	0.7000e+00	0.7000e+01	0.8555e+07
-9.9	0.29658e+01	0.24838e+02	0.14444e+03	0.28749e+00	0.4233e+00	0.4000e+00	0.4000e+01	0.5055e+07
-9.8	0.28592e+01	0.24772e+02	0.14475e+03	0.15701e+00	0.1933e+00	0.2000e+00	0.2000e+01	0.2555e+07
-9.7	0.27526e+01	0.24706e+02	0.14506e+03	0.28723e+00	0.8833e+00	0.1000e+00	0.1000e+01	0.1355e+07
-9.6	0.26460e+01	0.24640e+02	0.14537e+03	0.15635e+00	0.6533e+00	0.7000e+00	0.7000e+01	0.8555e+07

TABLE 1 (CONTINUED)

Z	$W(Z, 1/2)$	$W(Z, 3/2)$	$W(Z, 5/2)$	$W(Z, 7/2)$	$W(Z, 9/2)$	$W(Z, 11/2)$	$W(Z, 13/2)$	$W(Z, 15/2)$
2	0.216746e+01	0.111159e+02	0.34230e+02	0.24935e+03	0.15144e+04	0.84659e+04	0.50191e+05	0.32e15e+10
3	0.21426e+01	0.127406e+02	0.32491e+02	0.27615e+03	0.15182e+04	0.77944e+04	0.44687e+05	0.23517e+09
4	0.21274e+01	0.144661e+02	0.30852e+02	0.29944e+03	0.15220e+04	0.75644e+04	0.42847e+05	0.21517e+09
5	0.20743e+01	0.162161e+02	0.29251e+02	0.32194e+03	0.15313e+04	0.73993e+04	0.40569e+05	0.21351e+09
6	0.20432e+01	0.179511e+02	0.27652e+02	0.34325e+03	0.15401e+04	0.72395e+04	0.38351e+05	0.21151e+09
7	0.20142e+01	0.196961e+02	0.26053e+02	0.36456e+03	0.15491e+04	0.70795e+04	0.36230e+05	0.19262e+09
8	0.19876e+01	0.214411e+02	0.24454e+02	0.38587e+03	0.15582e+04	0.69297e+04	0.34145e+05	0.17465e+09
9	0.19647e+01	0.231961e+02	0.22855e+02	0.40718e+03	0.15673e+04	0.67804e+04	0.32064e+05	0.15768e+09
10	0.19447e+01	0.249511e+02	0.21256e+02	0.42849e+03	0.15764e+04	0.66311e+04	0.30033e+05	0.14171e+09
11	0.19267e+01	0.267061e+02	0.19657e+02	0.44980e+03	0.15855e+04	0.64818e+04	0.28002e+05	0.12674e+09
12	0.19107e+01	0.284611e+02	0.18058e+02	0.47111e+03	0.15946e+04	0.63325e+04	0.26001e+05	0.11282e+09
13	0.18967e+01	0.302161e+02	0.16459e+02	0.49242e+03	0.16037e+04	0.61832e+04	0.24001e+05	0.10002e+09
14	0.18847e+01	0.319711e+02	0.14860e+02	0.51373e+03	0.16128e+04	0.60339e+04	0.22001e+05	0.8823e+08
15	0.18747e+01	0.337261e+02	0.13261e+02	0.53504e+03	0.16219e+04	0.58846e+04	0.20001e+05	0.7754e+08
16	0.18667e+01	0.354811e+02	0.11662e+02	0.55635e+03	0.16310e+04	0.57353e+04	0.18001e+05	0.6700e+08
17	0.18607e+01	0.372361e+02	0.10063e+02	0.57766e+03	0.16401e+04	0.55860e+04	0.16001e+05	0.5660e+08
18	0.18567e+01	0.389911e+02	0.84643e+01	0.59897e+03	0.16492e+04	0.54367e+04	0.14001e+05	0.4620e+08
19	0.18547e+01	0.407461e+02	0.68634e+01	0.62028e+03	0.16583e+04	0.52874e+04	0.12001e+05	0.3580e+08
20	0.18547e+01	0.424911e+02	0.52625e+01	0.64160e+03	0.16674e+04	0.51381e+04	0.10001e+05	0.2540e+08
21	0.18547e+01	0.442461e+02	0.36616e+01	0.66291e+03	0.16765e+04	0.49888e+04	0.08001e+05	0.1500e+08
22	0.18547e+01	0.460011e+02	0.20607e+01	0.68422e+03	0.16856e+04	0.48395e+04	0.06001e+05	0.0460e+08
23	0.18547e+01	0.477561e+02	0.04600e+01	0.70553e+03	0.16947e+04	0.46902e+04	0.04001e+05	0.0000e+00
24	0.18547e+01	0.495111e+02	-0.19999e+01	0.72684e+03	0.17038e+04	0.45409e+04	0.02001e+05	0.0000e+00
25	0.18547e+01	0.512661e+02	-0.35999e+01	0.74815e+03	0.17129e+04	0.43916e+04	0.01001e+05	0.0000e+00
26	0.18547e+01	0.530211e+02	-0.51999e+01	0.76946e+03	0.17220e+04	0.42423e+04	0.00001e+05	0.0000e+00
27	0.18547e+01	0.547761e+02	-0.67999e+01	0.79077e+03	0.17311e+04	0.40930e+04	0.0000e+05	0.0000e+00
28	0.18547e+01	0.565311e+02	-0.83999e+01	0.81208e+03	0.17402e+04	0.39437e+04	0.0000e+05	0.0000e+00
29	0.18547e+01	0.582861e+02	-0.99999e+01	0.83339e+03	0.17493e+04	0.37944e+04	0.0000e+05	0.0000e+00
30	0.18547e+01	0.600411e+02	-0.11599e+01	0.85470e+03	0.17584e+04	0.36451e+04	0.0000e+05	0.0000e+00
31	0.18547e+01	0.617961e+02	-0.13199e+01	0.87601e+03	0.17675e+04	0.34958e+04	0.0000e+05	0.0000e+00
32	0.18547e+01	0.635511e+02	-0.14799e+01	0.89732e+03	0.17766e+04	0.33465e+04	0.0000e+05	0.0000e+00
33	0.18547e+01	0.653061e+02	-0.16399e+01	0.91863e+03	0.17857e+04	0.31972e+04	0.0000e+05	0.0000e+00
34	0.18547e+01	0.670611e+02	-0.17999e+01	0.93994e+03	0.17948e+04	0.30479e+04	0.0000e+05	0.0000e+00
35	0.18547e+01	0.688161e+02	-0.19599e+01	0.96125e+03	0.18039e+04	0.28986e+04	0.0000e+05	0.0000e+00
36	0.18547e+01	0.705711e+02	-0.21199e+01	0.98256e+03	0.18130e+04	0.27493e+04	0.0000e+05	0.0000e+00
37	0.18547e+01	0.723261e+02	-0.22799e+01	0.10038e+04	0.18221e+04	0.26000e+04	0.0000e+05	0.0000e+00
38	0.18547e+01	0.740811e+02	-0.24399e+01	0.10251e+04	0.18312e+04	0.24507e+04	0.0000e+05	0.0000e+00
39	0.18547e+01	0.758361e+02	-0.25999e+01	0.10464e+04	0.18403e+04	0.23014e+04	0.0000e+05	0.0000e+00
40	0.18547e+01	0.775911e+02	-0.27599e+01	0.10677e+04	0.18494e+04	0.21521e+04	0.0000e+05	0.0000e+00
41	0.18547e+01	0.793461e+02	-0.29199e+01	0.10890e+04	0.18585e+04	0.19928e+04	0.0000e+05	0.0000e+00
42	0.18547e+01	0.810911e+02	-0.30799e+01	0.11103e+04	0.18676e+04	0.18435e+04	0.0000e+05	0.0000e+00
43	0.18547e+01	0.828461e+02	-0.32399e+01	0.11316e+04	0.18767e+04	0.16942e+04	0.0000e+05	0.0000e+00
44	0.18547e+01	0.845011e+02	-0.33999e+01	0.11529e+04	0.18858e+04	0.15449e+04	0.0000e+05	0.0000e+00
45	0.18547e+01	0.862561e+02	-0.35599e+01	0.11742e+04	0.18949e+04	0.13956e+04	0.0000e+05	0.0000e+00
46	0.18547e+01	0.880111e+02	-0.37199e+01	0.11955e+04	0.19040e+04	0.12463e+04	0.0000e+05	0.0000e+00
47	0.18547e+01	0.897661e+02	-0.38799e+01	0.12168e+04	0.19131e+04	0.10970e+04	0.0000e+05	0.0000e+00
48	0.18547e+01	0.915211e+02	-0.40399e+01	0.12381e+04	0.19222e+04	0.94777e+04	0.0000e+05	0.0000e+00
49	0.18547e+01	0.932761e+02	-0.41999e+01	0.12594e+04	0.19313e+04	0.79854e+04	0.0000e+05	0.0000e+00
50	0.18547e+01	0.950311e+02	-0.43599e+01	0.12807e+04	0.19404e+04	0.64931e+04	0.0000e+05	0.0000e+00
51	0.18547e+01	0.967861e+02	-0.45199e+01	0.13020e+04	0.19495e+04	0.50008e+04	0.0000e+05	0.0000e+00
52	0.18547e+01	0.985411e+02	-0.46799e+01	0.13233e+04	0.19586e+04	0.35085e+04	0.0000e+05	0.0000e+00
53	0.18547e+01	0.100266e+03	-0.48399e+01	0.13446e+04	0.19677e+04	0.20162e+04	0.0000e+05	0.0000e+00
54	0.18547e+01	0.101921e+03	-0.50000e+01	0.13659e+04	0.19768e+04	0.05239e+04	0.0000e+05	0.0000e+00
55	0.18547e+01	0.103576e+03	-0.51699e+01	0.13872e+04	0.19859e+04	0.0000e+04	0.0000e+05	0.0000e+00
56	0.18547e+01	0.105231e+03	-0.53399e+01	0.14085e+04	0.19950e+04	0.0000e+04	0.0000e+05	0.0000e+00
57	0.18547e+01	0.106886e+03	-0.55000e+01	0.14298e+04	0.20041e+04	0.0000e+04	0.0000e+05	0.0000e+00
58	0.18547e+01	0.108541e+03	-0.56699e+01	0.14511e+04	0.20132e+04	0.0000e+04	0.0000e+05	0.0000e+00
59	0.18547e+01	0.110196e+03	-0.58399e+01	0.14724e+04	0.20223e+04	0.0000e+04	0.0000e+05	0.0000e+00
60	0.18547e+01	0.111851e+03	-0.60000e+01	0.14937e+04	0.20314e+04	0.0000e+04	0.0000e+05	0.0000e+00
61	0.18547e+01	0.113506e+03	-0.61699e+01	0.15150e+04	0.20405e+04	0.0000e+04	0.0000e+05	0.0000e+00
62	0.18547e+01	0.115161e+03	-0.63399e+01	0.15363e+04	0.20496e+04	0.0000e+04	0.0000e+05	0.0000e+00
63	0.18547e+01	0.116816e+03	-0.65000e+01	0.15576e+04	0.20587e+04	0.0000e+04	0.0000e+05	0.0000e+00
64	0.18547e+01	0.118471e+03	-0.66699e+01	0.15789e+04	0.20678e+04	0.0000e+04	0.0000e+05	0.0000e+00
65	0.18547e+01	0.120126e+03	-0.68399e+01	0.15902e+04	0.20769e+04	0.0000e+04	0.0000e+05	0.0000e+00
66	0.18547e+01	0.121781e+03	-0.70000e+01	0.16115e+04	0.20860e+04	0.0000e+04	0.0000e+05	0.0000e+00
67	0.18547e+01	0.123436e+03	-0.71699e+01	0.16328e+04	0.20951e+04	0.0000e+04	0.0000e+05	0.0000e+00
68	0.18547e+01	0.125091e+03	-0.73399e+01	0.16541e+04	0.21042e+04	0.0000e+04	0.0000e+05	0.0000e+00
69	0.18547e+01	0.126746e+03	-0.75000e+01	0.16754e+04	0.21133e+04	0.0000e+04	0.0000e+05	0.0000e+00
70	0.18547e+01	0.128396e+03	-0.76699e+01	0.16967e+04	0.21224e+04	0.0000e+04	0.0000e+05	0.0000e+00
71	0.18547e+01	0.130051e+03	-0.78399e+01	0.17180e+04	0.21315e+04	0.0000e+04	0.0000e+05	0.0000e+00
72	0.18547e+01	0.131706e+03	-0.80000e+01	0.17393e+04	0.21406e+04	0.0000e+04	0.0000e+05	0.0000e+00
73	0.18547e+01	0.133361e+03	-0.81699e+01	0.17606e+04	0.21497e+04	0.0000e+04	0.0000e+05	0.0000e+00
74	0.18547e+01	0.135016e+03	-0.83399e+01	0.17819e+04	0.21588e+04	0.0000e+04	0.0000e+05	0.0000e+00
75	0.18547e+01	0.136671e+03	-0.85000e+01	0.18032e+04	0.21679e+04	0.0000e+04	0.0000e+05	0.0000e+00
76	0.18547e+01	0.138326e+03	-0.86699e+01	0.18245e+04	0.21770e+04	0.0000e+04	0.0000e+05	0.0000e+00
77	0.18547e+01	0.140321e+03	-0.88399e+01	0.18458e+04	0.21861e+04	0.0000e+04	0.0000e+05	0.0000e+00
78	0.18547e+01	0.142076e+03	-0.90000e+01	0.18671e+04	0.21952e+04	0.0000e+04	0.0000e+05	0.0000e+00
79	0.18547e+01	0.143831e+03	-0.91699e+01	0.18884e+04	0.22043e+04	0.0000e+04	0.0000e+05	0.0000e+00
80	0.18547e+01	0.145586e+03	-0.93399e+01	0.19097e+04	0.22134e+04	0.0000e+04	0.0000e+05	0.0000e+00
81	0.18547e+01	0.147341e+03	-0.95000e+01	0.19310e+04	0.22225e+04	0.0000e+04	0.0000e+05	0.0000e+00
82	0.18547e+01	0.149096e+03	-0.96699e+01	0.19523e+04	0.22316e+04	0.0000e+04	0.0000e+05	0.0000e+00
83	0.18547e+01	0.150851e+03	-0.98399e+01	0.19736e+04	0.22407e+04	0.0000e+04	0.0000e+05	0.0000e+00
84	0.18547e+01	0.152606e+03	-0.10000e+02	0.19949e+04	0.22498e+04	0.0000e+04	0.0000e+05	0.0000e+00
85	0.18547e+01	0.154361e+03	-0.101699e+02	0.20162e+04	0.22589e+04	0.0000e+04	0.0000e+05	0.0000e+00
86	0.18547e+01	0.156116e+03	-0.103399e+02	0.20375e+04	0.22680e+04	0.0000e+04	0.0000e+05	0.0000e+00
87	0.18547e+01	0.157871e+03	-0.105000e+02	0.20588e+04	0.22771e+04	0.0000e+04	0.00	

TABLE 1 (CONTINUED)

Z	$W(z, 1/2)$	$W(z, 3/2)$	$W(z, 5/2)$	$W(z, 7/2)$	$W(z, 9/2)$	$W(z, 11/2)$	$W(z, 13/2)$	$W(z, 15/2)$
8.0	0.24515e+00	3.28845e+00	6.47144e+00	8.99435e+00	8.25259e+01	8.74251e+01	8.24689e+02	8.76311e+02
8.1	0.25514e+00	3.25195e+00	6.45455e+00	8.84135e+00	8.21138e+01	8.61524e+01	8.20208e+02	8.73544e+02
8.2	0.26513e+00	3.21546e+00	6.43476e+00	8.69470e+00	8.17038e+01	8.51524e+01	8.19086e+02	8.72477e+02
8.3	0.27512e+00	3.17897e+00	6.41497e+00	8.54405e+00	8.12980e+01	8.41524e+01	8.17959e+02	8.71410e+02
8.4	0.28511e+00	3.14248e+00	6.39428e+00	8.39335e+00	8.08724e+01	8.31524e+01	8.16814e+02	8.69343e+02
8.5	0.29510e+00	3.09599e+00	6.35351e+00	8.24265e+00	8.04941e+01	8.21524e+01	8.15678e+02	8.67276e+02
8.6	0.30509e+00	3.04950e+00	6.31284e+00	8.09196e+00	8.01169e+01	8.11524e+01	8.14542e+02	8.65210e+02
8.7	0.31508e+00	3.00301e+00	6.27215e+00	7.94127e+00	8.07398e+01	8.01524e+01	8.13375e+02	8.63143e+02
8.8	0.32507e+00	2.95652e+00	6.23146e+00	7.79058e+00	8.03631e+01	8.91524e+01	8.12208e+02	8.61076e+02
8.9	0.33506e+00	2.91003e+00	6.19076e+00	7.64000e+00	8.00000e+01	8.81524e+01	8.11042e+02	8.58990e+02
9.0	0.34505e+00	2.86354e+00	6.14998e+00	7.48922e+00	8.00000e+01	8.71524e+01	8.09773e+02	8.57923e+02
9.1	0.35504e+00	2.81705e+00	6.10920e+00	7.34844e+00	8.00000e+01	8.61524e+01	8.08506e+02	8.56856e+02
9.2	0.36503e+00	2.77056e+00	6.06842e+00	7.20766e+00	8.00000e+01	8.51524e+01	8.07239e+02	8.55789e+02
9.3	0.37502e+00	2.72407e+00	6.02764e+00	7.06688e+00	8.00000e+01	8.41524e+01	8.05972e+02	8.54722e+02
9.4	0.38501e+00	2.67758e+00	5.98686e+00	6.92610e+00	8.00000e+01	8.31524e+01	8.04705e+02	8.53655e+02
9.5	0.39500e+00	2.63109e+00	5.94608e+00	6.78532e+00	8.00000e+01	8.21524e+01	8.03438e+02	8.52588e+02
9.6	0.40500e+00	2.58460e+00	5.90530e+00	6.64454e+00	8.00000e+01	8.11524e+01	8.02171e+02	8.51521e+02
9.7	0.41500e+00	2.53811e+00	5.86452e+00	6.50376e+00	8.00000e+01	8.01524e+01	8.00904e+02	8.50454e+02
9.8	0.42500e+00	2.49162e+00	5.82374e+00	6.36300e+00	8.00000e+01	8.91524e+01	8.00737e+02	8.49387e+02
9.9	0.43500e+00	2.44513e+00	5.78296e+00	6.22222e+00	8.00000e+01	8.81524e+01	8.00570e+02	8.48320e+02
1.0	0.44500e+00	2.39864e+00	5.74218e+00	6.08144e+00	8.00000e+01	8.71524e+01	8.00403e+02	8.47253e+02
1.1	0.45500e+00	2.35215e+00	5.69140e+00	5.94066e+00	8.00000e+01	8.61524e+01	8.00236e+02	8.46186e+02
1.2	0.46500e+00	2.29566e+00	5.64952e+00	5.80000e+00	8.00000e+01	8.51524e+01	8.00069e+02	8.45119e+02
1.3	0.47500e+00	2.24917e+00	5.60874e+00	5.65922e+00	8.00000e+01	8.41524e+01	8.00002e+02	8.44052e+02
1.4	0.37426e+01	1.32446e+01	0.44397e+01	0.79294e+01	0.17464e+02	0.45195e+02	0.13305e+01	0.41478e+01
1.5	0.37096e+01	1.27429e+01	0.36856e+01	0.65524e+01	0.14264e+02	0.38653e+02	0.85320e+00	0.27497e+01
1.6	0.36765e+01	1.22412e+01	0.30424e+01	0.56892e+01	0.11264e+02	0.32364e+02	0.65127e+00	0.21956e+01
1.7	0.36434e+01	1.17395e+01	0.25144e+01	0.43773e+01	0.84381e+01	0.23684e+02	0.465127e+00	0.171956e+01
1.8	0.36103e+01	1.12378e+01	0.20864e+01	0.30652e+01	0.62201e+01	0.15838e+02	0.30723e+00	0.132345e+01
1.9	0.35772e+01	1.07361e+01	0.16584e+01	0.20733e+01	0.40495e+01	0.112376e+02	0.24233e+00	0.11747e+01
2.0	0.35442e+01	1.02344e+01	0.12304e+01	0.12733e+01	0.29195e+01	0.71121e+02	0.17734e+00	0.110437e+01
2.1	0.35112e+01	9.73227e+00	0.80224e+01	0.10559e+01	0.12973e+01	0.61219e+02	0.13459e+00	0.103473e+01
2.2	0.99419e+02	1.75394e+02	0.94432e+02	0.15620e+02	0.12973e+01	0.77373e+01	0.21598e+00	0.37272e+00
2.3	0.89476e+02	1.62559e+02	0.82940e+02	0.12845e+02	0.12973e+01	0.81087e+01	0.17388e+00	0.31770e+00
2.4	0.79541e+02	1.49725e+02	0.71056e+02	0.10240e+02	0.12973e+01	0.85996e+01	0.17388e+00	0.21770e+00
2.5	0.59911e+02	1.42352e+02	0.39494e+02	0.82303e+02	0.10481e+02	0.30028e+01	0.10481e+00	0.32329e+02
2.6	0.49880e+02	1.35579e+02	0.33844e+02	0.62500e+02	0.82303e+02	0.30028e+01	0.10481e+00	0.32329e+02
2.7	0.39850e+02	1.29374e+02	0.33484e+02	0.53195e+02	0.10478e+02	0.24452e+01	0.65559e+01	0.17574e+01
2.8	0.31549e+02	1.23153e+02	0.27644e+02	0.42260e+02	0.83301e+02	0.19352e+01	0.51399e+01	0.15293e+01
2.9	0.21315e+02	1.19315e+02	0.19759e+02	0.27266e+02	0.92384e+02	0.11948e+01	0.31430e+01	0.92860e+01

TABLE I

Z	MIZ (2)	MIZ (3)	MIZ (2)	MIZ (3)	MIZ (2)	MIZ (3)	MIZ (2)	MIZ (3)	MIZ (2)	MIZ (3)
-1.0	-1.1111e+01	7.99998e+01	-0.11000e+00	0.10000e+00	-1.00000e+00	0.10000e+00	-1.00000e+00	0.10000e+00	-1.00000e+00	0.10000e+00
-0.9	-0.10914e+01	7.96562e+01	0.99799e+03	0.97235e+03	-0.10584e+01	0.97356e+03	-0.97361e+03	0.97356e+03	-0.97361e+03	0.97356e+03
-0.8	-0.10797e+01	7.93200e+01	0.99562e+03	0.96876e+03	-0.10347e+01	0.93946e+03	-0.93946e+03	0.93946e+03	-0.93946e+03	0.93946e+03
-0.7	-0.10574e+01	7.89848e+01	0.99310e+03	0.94244e+03	-0.10105e+01	0.88676e+03	-0.88676e+03	0.88676e+03	-0.88676e+03	0.88676e+03
-0.6	-0.10345e+01	7.86496e+01	0.99054e+03	0.89952e+03	-0.98620e+01	0.83376e+03	-0.83376e+03	0.83376e+03	-0.83376e+03	0.83376e+03
-0.5	-0.10109e+01	7.83144e+01	0.98798e+03	0.85732e+03	-0.96195e+01	0.78096e+03	-0.78096e+03	0.78096e+03	-0.78096e+03	0.78096e+03
-0.4	-0.98752e+01	7.79789e+01	0.98534e+03	0.80372e+03	-0.93752e+01	0.72770e+03	-0.72770e+03	0.72770e+03	-0.72770e+03	0.72770e+03
-0.3	-0.96405e+01	7.76434e+01	0.98269e+03	0.75650e+03	-0.90355e+01	0.67465e+03	-0.67465e+03	0.67465e+03	-0.67465e+03	0.67465e+03
-0.2	-0.94058e+01	7.73079e+01	0.97994e+03	0.70938e+03	-0.83355e+01	0.62180e+03	-0.62180e+03	0.62180e+03	-0.62180e+03	0.62180e+03
-0.1	-0.91712e+01	7.69724e+01	0.97719e+03	0.66227e+03	-0.76755e+01	0.56894e+03	-0.56894e+03	0.56894e+03	-0.56894e+03	0.56894e+03
0.0	-0.89365e+01	7.66369e+01	0.97444e+03	0.61264e+03	-0.70155e+01	0.51567e+03	-0.51567e+03	0.51567e+03	-0.51567e+03	0.51567e+03
0.1	-0.87018e+01	7.63014e+01	0.97169e+03	0.56301e+03	-0.63555e+01	0.46240e+03	-0.46240e+03	0.46240e+03	-0.46240e+03	0.46240e+03
0.2	-0.84671e+01	7.59559e+01	0.96894e+03	0.51338e+03	-0.57055e+01	0.40913e+03	-0.40913e+03	0.40913e+03	-0.40913e+03	0.40913e+03
0.3	-0.82324e+01	7.56204e+01	0.96619e+03	0.46367e+03	-0.50555e+01	0.35597e+03	-0.35597e+03	0.35597e+03	-0.35597e+03	0.35597e+03
0.4	-0.79977e+01	7.52849e+01	0.96344e+03	0.41794e+03	-0.44055e+01	0.30320e+03	-0.30320e+03	0.30320e+03	-0.30320e+03	0.30320e+03
0.5	-0.77630e+01	7.49394e+01	0.96069e+03	0.37224e+03	-0.37555e+01	0.25043e+03	-0.25043e+03	0.25043e+03	-0.25043e+03	0.25043e+03
0.6	-0.75283e+01	7.45939e+01	0.95794e+03	0.33656e+03	-0.31055e+01	0.20766e+03	-0.20766e+03	0.20766e+03	-0.20766e+03	0.20766e+03
0.7	-0.72936e+01	7.42584e+01	0.95519e+03	0.29989e+03	-0.24555e+01	0.16489e+03	-0.16489e+03	0.16489e+03	-0.16489e+03	0.16489e+03
0.8	-0.70589e+01	7.39129e+01	0.95244e+03	0.26322e+03	-0.18055e+01	0.12212e+03	-0.12212e+03	0.12212e+03	-0.12212e+03	0.12212e+03
0.9	-0.68242e+01	7.35674e+01	0.94969e+03	0.22754e+03	-0.11555e+01	0.79345e+02	-0.79345e+02	0.79345e+02	-0.79345e+02	0.79345e+02
1.0	-0.65895e+01	7.32219e+01	0.94694e+03	0.19187e+03	-0.50555e+00	0.46470e+02	-0.46470e+02	0.46470e+02	-0.46470e+02	0.46470e+02
1.1	-0.63548e+01	7.28764e+01	0.94419e+03	0.15620e+03	-0.15055e+00	0.13603e+02	-0.13603e+02	0.13603e+02	-0.13603e+02	0.13603e+02
1.2	-0.61201e+01	7.25409e+01	0.94144e+03	0.12053e+03	-0.18555e+00	0.83867e+01	-0.83867e+01	0.83867e+01	-0.83867e+01	0.83867e+01
1.3	-0.58854e+01	7.22054e+01	0.93869e+03	0.84864e+03	-0.22055e+00	0.41101e+01	-0.41101e+01	0.41101e+01	-0.41101e+01	0.41101e+01
1.4	-0.56507e+01	7.18599e+01	0.93594e+03	0.59197e+03	-0.25555e+00	0.98335e+00	-0.98335e+00	0.98335e+00	-0.98335e+00	0.98335e+00
1.5	-0.54160e+01	7.15144e+01	0.93319e+03	0.33530e+03	-0.29055e+00	0.55568e+00	-0.55568e+00	0.55568e+00	-0.55568e+00	0.55568e+00
1.6	-0.51813e+01	7.11689e+01	0.93044e+03	0.77763e+03	-0.32555e+00	0.12790e+00	-0.12790e+00	0.12790e+00	-0.12790e+00	0.12790e+00
1.7	-0.49466e+01	7.08234e+01	0.92769e+03	0.52096e+03	-0.36055e+00	0.75134e+00	-0.75134e+00	0.75134e+00	-0.75134e+00	0.75134e+00
1.8	-0.47119e+01	7.04779e+01	0.92494e+03	0.26429e+03	-0.39555e+00	0.32367e+00	-0.32367e+00	0.32367e+00	-0.32367e+00	0.32367e+00
1.9	-0.44772e+01	7.01324e+01	0.92219e+03	0.12862e+03	-0.43055e+00	0.89901e+00	-0.89901e+00	0.89901e+00	-0.89901e+00	0.89901e+00
2.0	-0.42425e+01	6.97869e+01	0.91944e+03	0.83094e+03	-0.46555e+00	0.47235e+00	-0.47235e+00	0.47235e+00	-0.47235e+00	0.47235e+00
2.1	-0.39978e+01	6.94414e+01	0.91669e+03	0.47427e+03	-0.50055e+00	0.14467e+00	-0.14467e+00	0.14467e+00	-0.14467e+00	0.14467e+00
2.2	-0.37631e+01	6.90959e+01	0.91394e+03	0.11860e+03	-0.53555e+00	0.82005e+00	-0.82005e+00	0.82005e+00	-0.82005e+00	0.82005e+00
2.3	-0.35284e+01	6.87504e+01	0.91119e+03	0.72993e+03	-0.57055e+00	0.39343e+00	-0.39343e+00	0.39343e+00	-0.39343e+00	0.39343e+00
2.4	-0.32937e+01	6.84049e+01	0.90844e+03	0.37326e+03	-0.60555e+00	0.96681e+00	-0.96681e+00	0.96681e+00	-0.96681e+00	0.96681e+00
2.5	-0.30590e+01	6.80594e+01	0.90569e+03	0.23659e+03	-0.64055e+00	0.54019e+00	-0.54019e+00	0.54019e+00	-0.54019e+00	0.54019e+00
2.6	-0.28243e+01	6.77139e+01	0.90294e+03	0.87992e+03	-0.67555e+00	0.11353e+00	-0.11353e+00	0.11353e+00	-0.11353e+00	0.11353e+00
2.7	-0.25896e+01	6.73684e+01	0.90019e+03	0.52325e+03	-0.71055e+00	0.70777e+00	-0.70777e+00	0.70777e+00	-0.70777e+00	0.70777e+00
2.8	-0.23549e+01	6.67029e+01	0.89744e+03	0.16658e+03	-0.74555e+00	0.28215e+00	-0.28215e+00	0.28215e+00	-0.28215e+00	0.28215e+00
2.9	-0.21202e+01	6.63574e+01	0.89469e+03	0.80991e+03	-0.78055e+00	0.85553e+00	-0.85553e+00	0.85553e+00	-0.85553e+00	0.85553e+00
3.0	-0.18855e+01	6.59119e+01	0.89194e+03	0.55324e+03	-0.81555e+00	0.43891e+00	-0.43891e+00	0.43891e+00	-0.43891e+00	0.43891e+00
3.1	-0.16508e+01	6.54664e+01	0.88919e+03	0.29657e+03	-0.85055e+00	0.11225e+00	-0.11225e+00	0.11225e+00	-0.11225e+00	0.11225e+00
3.2	-0.14161e+01	6.51209e+01	0.88644e+03	0.14089e+03	-0.88555e+00	0.69592e+00	-0.69592e+00	0.69592e+00	-0.69592e+00	0.69592e+00
3.3	-0.11814e+01	6.47754e+01	0.88369e+03	0.85222e+03	-0.92055e+00	0.27929e+00	-0.27929e+00	0.27929e+00	-0.27929e+00	0.27929e+00
3.4	-0.11167e+01	6.44299e+01	0.88094e+03	0.59555e+03	-0.95555e+00	0.85553e+00	-0.85553e+00	0.85553e+00	-0.85553e+00	0.85553e+00
3.5	-0.10930e+01	6.40844e+01	0.87819e+03	0.24888e+03	-0.99055e+00	0.43894e+00	-0.43894e+00	0.43894e+00	-0.43894e+00	0.43894e+00
3.6	-0.10683e+01	6.37389e+01	0.87544e+03	0.99222e+03	-0.10255e+00	0.11225e+00	-0.11225e+00	0.11225e+00	-0.11225e+00	0.11225e+00
3.7	-0.10437e+01	6.33934e+01	0.87269e+03	0.53655e+03	-0.106055e+00	0.70777e+00	-0.70777e+00	0.70777e+00	-0.70777e+00	0.70777e+00
3.8	-0.10190e+01	6.29479e+01	0.87094e+03	0.29088e+03	-0.109555e+00	0.28215e+00	-0.28215e+00	0.28215e+00	-0.28215e+00	0.28215e+00
3.9	-0.99453e+01	6.25024e+01	0.86819e+03	0.94321e+03	-0.113055e+00	0.85553e+00	-0.85553e+00	0.85553e+00	-0.85553e+00	0.85553e+00
4.0	-0.96996e+01	6.20569e+01	0.86544e+03	0.58654e+03	-0.116555e+00	0.43894e+00	-0.43894e+00	0.43894e+00	-0.43894e+00	0.43894e+00
4.1	-0.10354e+01	6.17114e+01	0.86269e+03	0.34987e+03	-0.120055e+00	0.11225e+00	-0.11225e+00	0.11225e+00	-0.11225e+00	0.11225e+00
4.2	-0.10107e+01	6.13659e+01	0.86094e+03	0.99222e+03	-0.123555e+00	0.70777e+00	-0.70777e+00	0.70777e+00	-0.70777e+00	0.70777e+00
4.3	-0.98619e+01	6.09104e+01	0.85919e+03	0.53655e+03	-0.127055e+00	0.28215e+00	-0.28215e+00	0.28215e+00	-0.28215e+00	0.28215e+00
4.4	-0.96172e+01	6.04649e+01	0.85734e+03	0.29088e+03	-0.130555e+00	0.85553e+00	-0.85553e+00	0.85553e+00	-0.85553e+00	0.85553e+00
4.5	-0.93725e+01	5.99994e+01	0.85559e+03	0.94321e+03	-0.134055e+00	0.43894e+00	-0.43894e+00	0.43894e+00	-0.43894e+00	0.43894e+00
4.6	-0.91278e+01	5.95539e+01	0.85384e+03	0.58654e+03	-0.137555e+00	0.11225e+00	-0.11225e+00	0.11225e+00	-0.11225e+00	0.11225e+00
4.7	-0.88831e+01	5.91084e+01	0.85209e+03	0.29088e+03	-0.141055e+00	0.70777e+00	-0.70777e+00	0.70777e+00	-0.70777e+00	0.70777e+00
4.8	-0.86384e+01	5.86629e+01	0.85034e+03	0.94321e+03	-0.144555e+00	0.28215e+00	-0.28215e+00	0.28215e+00	-0.28215e+00	0.28215e+00
4.9	-0.83937e+01	5.82174e+01	0.84859e+03	0.58654e+03	-0.148055e+00	0.85553e+00	-0.85553e+00	0.85553e+00	-0.85553e+00	0.85553e+00
5.0	-0.81490e+01	5.77719e+01	0.84684e+03	0.29088e+03	-0.151555e+00	0.43894e+00	-0.43894e+00	0.43894e+00	-0.43894e+00	0.43894e+00
5.1	-0.10303e+01	5.73264e+01	0.84509e+03	0.94321e+03	-0.155055e+00	0.11225e+00	-0.11225e+00	0.11225e+00	-0.11225e+00	0.11225e+00
5.2	-0.10057e+01	5.68809e+01	0.84334e+03	0.58654e+03	-0.158555e+00	0.70777e+00	-0.70777e+00	0.70777e+00	-0.70777e+00	0.70777e+00
5.3	-0.98129e+01	5.64354e+01	0.84159e+03	0.29088e+03	-0.162055e+00	0.28215e+00	-0.28215e+00	0.28215e+00	-0.28215e+00	0.28215e+00
5.4	-0.95682e+01	5.59909e+01	0.83984e+03	0.94321e+03	-0.165555e+00	0.85553e+00	-0.85553e+00	0.85553e+00	-0.85553e+00	0.85553e+00
5.5	-0.93235e+01	5.55454e+01	0.83809e+03	0.58654e+03	-0.169055e+00	0.43894e+00	-0.43894e+00	0.43894e+00	-0.43894e+00	0.43894e+00
5.6	-0.90788e+01	5.50999e+01	0.83634e+03	0.29088e+03	-0.172555e+00	0.11225e+00	-0.11225e+00	0.11225e+00	-0.11225e+00	0.11225e+00
5.7	-0.88341e+01	5.46544e+01	0.83459e+03	0.94321e+03	-0.176055e+00	0.70777e+00	-0.70777e+00	0.70777e+00	-0.70777e+00	0.70777e+00
5.8	-0.85894e+01	5.42089e+01	0.83284e+03	0.58654e+03	-0.179555e+00	0.28215e+00	-0.28215e+00	0.28215e+00	-0.28215e+00	0.28215e+00
5.9	-0.83447e+01	5.37634e+01	0.83109e+03	0.29088e+03	-0.183055e+00					

TABLE 2 (CONTINUED)

Z	W(z, 0)	W(z, 1)	W(z, 2)	W(z, 3)	W(z, 4)	W(z, 5)	W(z, 6)	W(z, 7)
-2.0	0.10507E+01	0.49292E+01	0.24996E+02	0.12708E+03	0.64497E+03	0.36248E+04	0.26665E+05	0.12328E+06
-1.9	0.92143E+01	0.42529E+01	0.24321E+02	0.11973E+03	0.61562E+03	0.33048E+04	0.18588E+05	0.10755E+06
-1.8	0.79748E+01	0.47718E+01	0.23676E+02	0.10267E+03	0.56915E+03	0.30087E+04	0.16695E+05	0.97215E+05
-1.7	0.93930E+00	0.46306E+01	0.22136E+02	0.10267E+03	0.56915E+03	0.27351E+04	0.14973E+05	0.86136E+05
-1.6	0.90312E+00	0.45385E+01	0.21213E+02	0.93546E+03	0.48440E+04	0.24534E+04	0.14339E+05	0.76211E+05
-1.5	0.87239E+00	0.44497E+01	0.20314E+02	0.93154E+02	0.44590E+04	0.22533E+04	0.14905E+05	0.69025E+05
-1.4	0.84605E+00	0.43538E+01	0.19433E+02	0.87195E+02	0.40984E+04	0.20345E+04	0.16704E+05	0.59395E+05
-1.3	0.82210E+00	0.42562E+01	0.18596E+02	0.81495E+02	0.37611E+04	0.18401E+04	0.19423E+04	0.52315E+05
-1.2	0.81372E+00	0.41954E+01	0.17721E+02	0.76535E+02	0.34461E+04	0.16600E+04	0.18493E+04	0.46096E+05
-1.1	0.81202E+00	0.41370E+01	0.16867E+02	0.70482E+02	0.31923E+04	0.14951E+04	0.17547E+04	0.44415E+05
-1.0	0.81173E+00	0.40344E+01	0.16074E+02	0.65917E+02	0.29020E+04	0.13444E+04	0.16699E+04	0.35421E+05
-0.9	0.82269E+00	0.39547E+01	0.15274E+02	0.61224E+02	0.26247E+04	0.12520E+04	0.15531E+04	0.31026E+05
-0.8	0.84109E+00	0.38716E+01	0.14492E+02	0.56552E+02	0.23686E+04	0.11863E+04	0.14335E+04	0.27344E+05
-0.7	0.86622E+00	0.37636E+01	0.13720E+02	0.52519E+02	0.21703E+04	0.94775E+03	0.14311E+04	0.23344E+05
-0.6	0.89715E+00	0.36918E+01	0.12970E+02	0.48451E+02	0.19684E+03	0.86434E+03	0.10019E+04	0.20400E+05
-0.5	0.93242E+00	0.36467E+01	0.12247E+02	0.44735E+02	0.17819E+03	0.77065E+03	0.35919E+04	0.17517E+05
-0.4	0.97205E+00	0.35915E+01	0.11592E+02	0.41193E+02	0.16102E+03	0.66590E+03	0.31554E+04	0.15559E+05
-0.3	1.01280E+00	0.34123E+01	0.10845E+02	0.37845E+02	0.14584E+03	0.60940E+03	0.27671E+04	0.13495E+05
-0.2	1.05474E+01	0.33089E+01	0.10271E+02	0.34456E+02	0.13075E+03	0.55304E+03	0.24172E+04	0.11875E+05
-0.1	1.09501E+01	0.32013E+01	0.95297E+02	0.31702E+02	0.11748E+03	0.47944E+03	0.21172E+04	0.10275E+05
0.0	1.13370E+01	0.30898E+01	0.88995E+02	0.29591E+02	0.10536E+03	0.42228E+03	0.18472E+04	0.87234E+04
-2.0	0.11711E+01	0.29747E+01	0.82482E+02	0.26366E+02	0.94308E+02	0.37290E+03	0.16087E+04	0.74945E+04
-1.8	0.12049E+01	0.28557E+01	0.77010E+02	0.23968E+02	0.84247E+02	0.32830E+03	0.13986E+04	0.64435E+04
-1.7	0.12400E+01	0.27395E+01	0.71919E+02	0.21743E+02	0.75110E+02	0.28850E+03	0.11213E+04	0.55306E+04
-1.6	0.12507E+01	0.26410E+01	0.66467E+02	0.19510E+02	0.68330E+02	0.25305E+03	0.10515E+04	0.47389E+04
-1.5	0.12622E+01	0.25441E+01	0.60981E+02	0.17774E+02	0.60344E+02	0.22630E+03	0.94537E+03	0.40537E+04
-1.4	0.12730E+01	0.23372E+01	0.56319E+02	0.16019E+02	0.52590E+02	0.19358E+03	0.78499E+03	0.34737E+04
-1.3	0.12738E+01	0.22299E+01	0.51552E+02	0.14409E+02	0.46510E+02	0.16844E+03	0.67642E+03	0.29811E+04
-1.2	0.12674E+01	0.21236E+01	0.47220E+02	0.12924E+02	0.41040E+02	0.14697E+03	0.58101E+03	0.25114E+04
-1.1	0.12546E+01	0.19769E+01	0.43414E+02	0.11569E+02	0.36134E+02	0.12769E+03	0.49954E+03	0.21330E+04
-1.0	0.12635E+01	0.18537E+01	0.39313E+02	0.10333E+02	0.31777E+02	0.11073E+03	0.42812E+03	0.18906E+04
-0.9	0.12710E+01	0.17326E+01	0.35732E+02	0.92078E+01	0.27873E+02	0.95837E+02	0.36625E+03	0.15321E+04
-0.8	0.11779E+01	0.16103E+01	0.32194E+02	0.82041E+01	0.24031E+02	0.82785E+02	0.33625E+03	0.12649E+04
-0.7	0.11414E+01	0.14943E+01	0.29289E+02	0.72619E+01	0.21311E+02	0.71714E+02	0.266657E+03	0.10725E+04
-0.6	0.11504E+01	0.13321E+01	0.26413E+02	0.64269E+01	0.18574E+02	0.64477E+02	0.22630E+03	0.87737E+03
-0.5	0.10526E+01	0.12737E+01	0.23757E+02	0.56749E+01	0.16158E+02	0.52744E+02	0.19242E+03	0.77337E+03
-0.4	0.10708E+01	0.11771E+01	0.21313E+02	0.49994E+01	0.14026E+02	0.45221E+02	0.16320E+03	0.64337E+03
-0.3	0.95729E+00	0.10720E+01	0.19670E+02	0.43941E+01	0.12124E+02	0.36678E+02	0.13814E+03	0.54449E+03
-0.2	0.90271E+00	0.96175E+00	0.17816E+02	0.38933E+01	0.10502E+02	0.33024E+02	0.11669E+03	0.45529E+03
-0.1	0.85234E+00	0.89175E+00	0.16095E+02	0.34249E+01	0.90101E+01	0.28810E+02	0.78301E+02	0.37995E+03
0.0	0.79901E+00	0.80376E+00	0.13447E+02	0.29428E+01	0.77978E+01	0.20934E+02	0.48292E+02	0.31672E+03
-0.9	0.74559E+00	0.73194E+00	0.11970E+02	0.25626E+01	0.64982E+01	0.20317E+02	0.175541E+03	0.26531E+03
-0.8	0.69277E+00	0.66603E+00	0.10516E+02	0.22256E+01	0.57112E+01	0.17213E+02	0.158307E+02	0.24299E+03
-0.7	0.64101E+00	0.59335E+00	0.92635E+01	0.19305E+01	0.49114E+01	0.14554E+02	0.147797E+02	0.18505E+03
-0.6	0.59698E+00	0.51259E+00	0.81392E+01	0.16697E+01	0.41925E+01	0.12282E+02	0.14764E+02	0.15235E+03
-0.5	0.55207E+00	0.44325E+00	0.71331E+01	0.14409E+01	0.35714E+01	0.10345E+02	0.133991E+02	0.12414E+03
-0.4	0.49636E+00	0.42260E+00	0.62429E+01	0.12556E+01	0.30360E+01	0.82829E+01	0.10240E+02	0.84313E+02
-0.3	0.45140E+00	0.37595E+00	0.54249E+01	0.10556E+01	0.26560E+01	0.67203E+01	0.82229E+02	0.64873E+02
-0.2	0.40494E+00	0.33293E+00	0.47287E+01	0.92356E+00	0.22803E+01	0.511605E+01	0.67203E+02	0.51672E+02
-0.1	0.37131E+00	0.29357E+00	0.41025E+01	0.78124E+00	0.18419E+01	0.45071E+01	0.41434E+02	0.46672E+02
0.0	0.33333E+00	0.25882E+00	0.35503E+00	0.666657E+00	0.159259E+01	0.42063E+02	0.33333E+02	0.465075E+02

TABLE 2 (CONTINUED)

Z	$W(Z, 0)$	$W(Z, 1)$	$W(Z, 2)$	$W(Z, 3)$	$W(Z, 4)$	$W(Z, 5)$	$W(Z, 6)$	$W(Z, 7)$
0.0	0.3333E+00	1.2588E+00	0.3550E+00	0.6466E+00	0.1552E+01	0.4260E+01	0.1333E+02	0.4658E+02
0.1	0.2991E+00	1.2272E+00	0.3044E+00	0.5876E+00	0.1065E+01	0.3547E+01	0.1099E+02	0.3760E+02
0.2	0.2674E+00	0.1959E+00	0.2639E+00	0.4821E+00	0.1097E+01	0.2947E+01	0.9554E+01	0.3110E+02
0.3	0.2383E+00	0.1736E+00	0.2267E+00	0.4007E+00	0.5192E+00	0.2444E+01	0.7449E+01	0.2514E+02
0.4	0.2116E+00	0.1511E+00	0.1942E+00	0.3456E+00	0.7686E+00	0.2023E+01	0.6133E+01	0.2061E+02
0.5	0.1873E+00	0.1312E+00	0.1660E+00	0.2917E+00	0.4414E+00	0.1672E+01	0.4998E+01	0.1674E+02
0.6	0.1652E+00	0.1136E+00	0.1414E+00	0.2456E+00	0.3342E+00	0.1379E+01	0.4685E+01	0.1357E+02
0.7	0.1453E+00	0.9889E+01	0.1256E+00	0.2054E+00	0.2444E+00	0.1135E+01	0.3333E+01	0.1098E+02
0.8	0.1274E+00	0.8659E+01	0.1025E+00	0.1731E+00	0.1849E+00	0.9517E+00	0.2227E+01	0.8710E+01
0.9	0.1113E+00	0.7233E+01	0.8664E+01	0.1447E+00	0.1384E+00	0.7644E+00	0.1927E+01	0.7140E+01
1.0	0.9716E+01	0.6253E+01	0.7316E+01	0.1208E+00	0.2519E+00	0.6260E+00	0.1791E+01	0.5766E+01
1.1	0.8420E+01	0.5328E+01	0.6166E+01	0.1006E+00	0.2077E+00	0.5114E+00	0.1451E+01	0.4635E+01
1.2	0.7290E+01	0.4523E+01	0.5184E+01	0.8370E+00	0.1709E+00	0.4179E+00	0.1173E+01	0.3719E+01
1.3	0.6292E+01	0.3844E+01	0.4349E+01	0.6943E+00	0.1403E+00	0.3394E+00	0.9474E+00	0.2980E+01
1.4	0.5322E+01	0.3252E+01	0.3840E+01	0.5794E+00	0.1159E+00	0.2808E+00	0.7635E+00	0.2383E+01
1.5	0.4654E+01	0.2742E+01	0.3404E+01	0.4748E+00	0.9447E+00	0.2234E+00	0.6186E+00	0.1741E+01
1.6	0.3944E+01	0.2325E+01	0.2533E+01	0.3914E+00	0.7607E+00	0.1818E+00	0.4932E+00	0.1357E+01
1.7	0.3406E+01	0.1956E+01	0.2106E+01	0.3220E+00	0.6264E+00	0.1442E+00	0.3953E+00	0.1207E+01
1.8	0.2949E+01	0.1642E+01	0.1747E+01	0.2643E+00	0.5095E+00	0.1179E+00	0.3164E+00	0.9591E+00
1.9	0.2497E+01	0.1375E+01	0.1444E+01	0.2126E+00	0.4136E+00	0.9497E+00	0.2527E+00	0.7670E+00
2.0	0.2090E+01	0.1148E+01	0.1194E+01	0.1773E+00	0.3351E+00	0.7631E+00	0.2015E+00	0.6023E+00
2.1	0.1740E+01	0.9575E+02	0.9846E+02	0.1445E+01	0.2710E+01	0.6121E+01	0.1604E+00	0.4761E+00
2.2	0.1439E+01	0.7809E+02	0.8099E+02	0.1199E+01	0.2209E+01	0.5073E+01	0.1275E+00	0.3758E+00
2.3	0.1242E+01	0.6430E+02	0.6643E+02	0.9563E+02	0.1742E+02	0.3017E+01	0.1018E+00	0.2910E+00
2.4	0.1040E+01	0.5469E+02	0.5439E+02	0.7757E+02	0.1417E+01	0.2125E+01	0.8931E+01	0.2439E+01
2.5	0.8669E+02	0.4512E+02	0.4444E+02	0.6279E+02	0.1137E+01	0.2469E+01	0.6335E+01	0.1829E+00
2.6	0.7247E+02	0.3717E+02	0.3623E+02	0.5073E+02	0.5114E+01	0.1970E+01	0.5000E+01	0.1434E+00
2.7	0.6022E+02	0.3055E+02	0.2949E+02	0.4098E+02	0.3200E+02	0.1570E+01	0.3940E+01	0.1122E+00
2.8	0.4997E+02	0.2505E+02	0.2394E+02	0.3291E+02	0.3817E+02	0.1244E+01	0.3180E+01	0.7735E+01
2.9	0.4135E+02	0.2050E+02	0.1944E+02	0.2443E+02	0.4635E+02	0.9836E+02	0.2434E+01	0.6845E+01
3.0	0.3474E+02	0.1671E+02	0.1568E+02	0.2117E+02	0.2686E+02	0.7767E+02	0.1968E+01	0.5332E+01

TABLE 3

Z	$X(2,1)$	$X(2,2)$	$X(2,3)$	$Y(2,1)$	$Y(2,2)$	$Y(2,3)$
-1.8	0.99998	0.99392	0.98300	0.99987	0.99569	0.98595
-1.7	0.99919	0.97956	0.96259	1.00118	0.99579	0.98573
-1.6	0.99839	0.97356	0.94927	1.00179	0.99587	0.98579
-1.5	0.99759	0.97340	0.94146	1.00233	0.99594	0.98471
-1.4	0.99679	0.97246	0.92798	1.00289	0.99440	0.98367
-1.3	0.99599	0.97214	0.91999	0.99989	0.99444	0.98308
-1.2	0.99520	0.97182	0.91144	0.99942	0.99371	0.98221
-1.1	0.99441	0.97144	0.89718	0.99827	0.99210	0.97971
-1.0	0.99362	0.97095	0.87620	0.99785	0.99110	0.97835
-0.9	0.99283	0.96945	0.84724	0.99551	0.98991	0.97637
-0.8	0.99203	0.96795	0.81025	0.99321	0.98869	0.97479
-0.7	0.99123	0.96874	0.77251	0.99594	0.98923	0.97477
-0.6	0.99043	0.96844	0.73711	0.99591	0.98913	0.97417
-0.5	0.98963	0.96714	0.69359	0.99582	0.98903	0.97311
-0.4	0.98883	0.96822	0.70225	0.99543	0.98951	0.97341
-0.3	0.98803	0.96793	0.66757	0.99542	0.98951	0.97317
-0.2	0.98723	0.96813	0.63884	0.99526	0.98951	0.97311
-0.1	0.98643	0.96827	0.60807	0.99526	0.98978	0.97261
0.0	0.98563	0.96847	0.57732	0.99526	0.98978	0.97233
0.1	0.98483	0.96782	0.54620	0.99989	0.99145	0.97148
0.2	0.98403	0.96752	0.51511	1.00222	0.99347	0.97085
0.3	0.98323	0.96722	0.48407	1.00272	0.99547	0.97057
0.4	0.98243	0.96692	0.45242	1.00377	0.99776	0.96834
0.5	0.98163	0.96662	0.42077	1.00431	0.99886	0.96664
0.6	0.98083	0.96732	0.38908	1.00231	0.99888	0.96557
0.7	0.97983	0.96848	0.35889	0.99970	0.98738	0.96222
0.8	0.97883	0.96931	0.32825	0.99970	0.98738	0.96144
0.9	0.97783	0.97013	0.29728	0.99781	0.98392	0.95888
1.0	0.97683	0.97093	0.26632	0.99559	0.98195	0.95390
1.1	0.97583	0.97173	0.23535	0.99559	0.98195	0.95391
1.2	0.97483	0.97253	0.19441	0.99389	0.97808	0.94795
1.3	0.97383	0.97333	0.16344	0.99382	0.97808	0.94623
1.4	0.97283	0.97424	0.13234	0.99382	0.97777	0.94523
1.5	0.97183	0.97504	0.09125	0.99946	0.97349	0.93793
1.6	0.97083	0.97584	0.05015	0.99946	0.97349	0.93793
1.7	0.96983	0.97664	0.01905	0.99842	0.97204	0.93516
1.8	0.96883	0.97744	0.91936	0.99842	0.97204	0.93516
1.9	0.96783	0.97824	0.98899	0.99857	0.97182	0.93312
2.0	0.96683	0.97904	0.95852	0.99857	0.97182	0.93312
2.1	0.96583	0.98083	0.92735	0.99938	0.97234	0.92935
2.2	0.96483	0.98163	0.89608	0.99942	0.97298	0.92745
2.3	0.96383	0.98243	0.86482	0.99942	0.97298	0.92543
2.4	0.96283	0.98323	0.83355	0.99942	0.97446	0.92294
2.5	0.96183	0.98403	0.80227	0.99942	0.97446	0.92111
2.6	0.96083	0.98483	0.77099	0.99942	0.97446	0.92011
2.7	0.95983	0.98563	0.73971	0.99749	0.97551	0.91669
2.8	0.95883	0.98643	0.70843	0.99959	0.97514	0.91250
2.9	0.95783	0.98723	0.67715	1.00203	0.97298	0.91174
3.0	0.95683	0.98803	0.64586	1.00203	0.97298	0.91143
3.1	0.95583	0.98883	0.61456	1.00289	0.97268	0.89427
3.2	0.95483	0.98963	0.58327	1.01129	0.98737	0.88974

TABLE 3 (CONTINUED)

Z	$x(2,1)$	$x(2,2)$	$x(2,3)$	$y(2,1)$	$y(2,2)$	$y(2,3)$
-4.0	0.99455	0.79366	0.88131	1.00329	0.90237	0.80594
-4.1	0.99327	0.74985	0.87297	1.00304	0.96364	0.87640
-4.2	0.99214	0.94534	0.86499	1.00225	0.99764	0.86967
-4.3	0.99110	0.93459	0.85763	1.00143	0.99274	0.85757
-4.4	0.99014	0.93455	0.84762	0.99956	0.94356	0.84664
-4.5	0.98922	0.72852	0.83713	0.99564	0.93778	0.82649
-4.6	0.98832	0.72852	0.82713	0.99278	0.93278	0.81513
-4.7	0.98846	0.91403	0.81581	0.98760	0.91446	0.79551
-4.8	0.98849	0.91403	0.80581	0.98279	0.90489	0.78551
-4.9	0.97307	0.49793	0.79282	0.97742	0.89779	0.76175
-4.0	0.98899	0.19934	0.78092	0.97149	0.87955	0.74424
-4.1	0.98894	0.19934	0.77092	0.96843	0.87443	0.73447
-4.2	0.98811	0.37144	0.75962	0.95840	0.85129	0.70862
-4.3	0.98725	0.37144	0.74962	0.94423	0.82349	0.67519
-4.4	0.98642	0.59292	0.73210	0.94423	0.82349	0.67519
-4.5	0.94575	0.44367	0.72087	0.93695	0.80985	0.65971
-4.6	0.94575	0.44367	0.71087	0.93298	0.80482	0.64971
-4.7	0.93596	0.32526	0.69932	0.92221	0.78293	0.62196
-4.8	0.93592	0.15834	0.68479	0.91491	0.76922	0.60578
-4.9	0.93592	0.15834	0.67479	0.90991	0.75423	0.59513
-5.0	0.92143	0.79856	0.66255	0.90562	0.74356	0.57923
-5.1	0.92143	0.79856	0.65255	0.90562	0.74356	0.57923
-5.2	0.91222	0.75172	0.64157	0.86698	0.71544	0.54640
-5.3	0.90786	0.77389	0.63159	0.88049	0.70862	0.53229
-5.4	0.90786	0.77389	0.62159	0.88049	0.70862	0.53229
-5.5	0.89534	0.75841	0.61269	0.86611	0.86693	0.50849
-5.6	0.89534	0.75841	0.60269	0.86229	0.87447	0.49473
-5.7	0.89534	0.75841	0.59269	0.86229	0.87447	0.49473
-5.8	0.88778	0.73794	0.58762	0.95137	0.85767	0.47956
-5.9	0.88778	0.73794	0.57762	0.95137	0.85767	0.47956
-6.0	0.88582	0.72496	0.57162	0.94539	0.84498	0.45931
-6.1	0.87756	0.71907	0.56441	0.93476	0.83268	0.44743
-6.2	0.87756	0.71907	0.55441	0.93476	0.83268	0.44743
-6.3	0.87146	0.70803	0.55993	0.82813	0.91798	0.43105
-6.4	0.87146	0.70803	0.54993	0.82813	0.91798	0.43105
-6.5	0.86992	0.59796	0.53864	0.87013	0.89474	0.42536
-6.6	0.86833	0.49329	0.53298	0.81672	0.95868	0.40959
-6.7	0.86833	0.49329	0.52298	0.81672	0.95868	0.40959
-6.8	0.87932	0.59445	0.52219	0.91008	0.96728	0.39711
-6.9	0.87932	0.59445	0.51219	0.91008	0.96728	0.39711
-7.0	0.87932	0.59445	0.50219	0.91008	0.96728	0.39711
-7.1	0.87929	0.16938	0.51715	0.80896	0.95203	0.39134
-7.2	0.87929	0.16938	0.50715	0.80896	0.95203	0.39134
-7.3	0.85213	0.57274	0.50787	0.80129	0.97232	0.38673
-7.4	0.85213	0.57274	0.50287	0.80129	0.97232	0.38673
-7.5	0.84861	0.30254	0.49548	0.98733	0.59592	0.36674
-7.6	0.84861	0.30254	0.48548	0.98733	0.59592	0.36674
-7.7	0.84861	0.30254	0.47548	0.98733	0.59592	0.36674
-7.8	0.84335	0.55646	0.48769	0.78931	0.95220	0.35659
-7.9	0.84335	0.55646	0.47769	0.78931	0.95220	0.35659
-8.0	0.84183	0.52265	0.48452	0.78726	0.94851	0.35480
-8.1	0.84183	0.52265	0.47452	0.78726	0.94851	0.35480
-8.2	0.83708	0.64637	0.47864	0.78347	0.94203	0.34777
-8.3	0.83708	0.64637	0.46864	0.78347	0.94203	0.34777
-8.4	0.83708	0.64637	0.45864	0.78347	0.94203	0.34777
-8.5	0.83708	0.54598	0.47931	0.78170	0.93902	0.34451

TABLE 2

Z	$w(z, 0)$	$w(z, 1)$	$w(z, 2)$	$w(z, 3)$	$w(z, 4)$	$w(z, 5)$
-15.0	3.11811E+01	3.99948E+01	0.99986E+02	0.13026E+04	0.16008E+07	0.18708E+06
-14.9	3.11811E+01	3.99948E+01	0.99986E+02	0.13026E+04	0.16008E+07	0.18708E+06
-14.8	3.10719E+01	3.97794E+01	0.76633E+02	0.94329E+03	0.13302E+04	0.19315E+05
-14.7	3.10476E+01	3.96715E+01	0.84948E+02	0.85474E+03	0.15530E+04	0.17758E+05
-14.6	3.10233E+01	3.95636E+01	0.93263E+02	0.76619E+03	0.17763E+04	0.16191E+05
-14.5	3.05387E+01	3.94557E+01	0.76246E+02	0.65956E+03	0.14221E+04	0.17918E+05
-14.4	3.04244E+01	3.93478E+01	0.84531E+02	0.57101E+03	0.16423E+04	0.16352E+05
-14.3	3.02722E+01	3.92399E+01	0.86931E+02	0.48641E+03	0.17559E+04	0.17331E+05
-14.2	3.01576E+01	3.91320E+01	0.84845E+02	0.39071E+03	0.17337E+04	0.16740E+05
-14.1	3.00430E+01	3.90241E+01	0.83758E+02	0.30497E+03	0.17111E+04	0.16153E+05
-14.0	0.99220E+01	3.89162E+01	0.81272E+02	0.21912E+03	0.16332E+04	0.15672E+05
-13.9	0.98084E+01	3.88083E+01	0.79335E+02	0.17049E+03	0.15454E+04	0.15729E+05
-13.8	0.96948E+01	3.86994E+01	0.77458E+02	0.13186E+03	0.14576E+04	0.15246E+05
-13.7	0.94641E+00	3.87324E+01	0.75774E+02	0.44056E+03	0.13798E+04	0.15135E+05
-13.6	0.91320E+00	3.85245E+01	0.73997E+02	0.30183E+03	0.12802E+04	0.14951E+05
-13.5	0.88020E+00	3.83166E+01	0.72220E+02	0.26315E+03	0.12286E+04	0.14951E+05
-13.4	0.84344E+00	3.81087E+01	0.70352E+02	0.19974E+03	0.10461E+04	0.14323E+05
-13.3	0.80844E+00	3.78908E+01	0.68484E+02	0.14633E+03	0.86382E+04	0.13705E+05
-13.2	0.10874E+00	3.76829E+01	0.66616E+02	0.92993E+03	0.68091E+04	0.13642E+05
-13.1	0.11272E+00	3.74750E+01	0.64748E+02	0.67722E+03	0.50809E+04	0.13642E+05
-13.0	0.11672E+00	3.72671E+01	0.62880E+02	0.42355E+03	0.33527E+04	0.13642E+05
-12.9	0.12072E+00	3.70592E+01	0.61012E+02	0.27987E+03	0.16245E+04	0.13642E+05
-12.8	0.12472E+00	3.68513E+01	0.59144E+02	0.13520E+03	0.99334E+04	0.13642E+05
-12.7	0.12872E+00	3.66434E+01	0.57276E+02	0.80533E+03	0.46052E+04	0.13642E+05
-12.6	0.13272E+00	3.64355E+01	0.55408E+02	0.35866E+03	0.19770E+04	0.13642E+05
-12.5	0.13672E+00	3.62276E+01	0.53540E+02	0.21397E+03	0.13488E+04	0.13642E+05
-12.4	0.14072E+00	3.60207E+01	0.51672E+02	0.16930E+03	0.91006E+04	0.13642E+05
-12.3	0.14472E+00	3.58128E+01	0.49804E+02	0.12463E+03	0.57124E+04	0.13642E+05
-12.2	0.14872E+00	3.56049E+01	0.47936E+02	0.79966E+03	0.23241E+04	0.13642E+05
-12.1	0.15272E+00	3.53970E+01	0.46068E+02	0.35333E+03	0.16953E+04	0.13642E+05
-12.0	0.15672E+00	3.51891E+01	0.44200E+02	0.19957E+03	0.10665E+04	0.13642E+05
-11.9	0.16072E+00	3.49812E+01	0.42332E+02	0.14580E+03	0.73774E+04	0.13642E+05
-11.8	0.16472E+00	3.47733E+01	0.40464E+02	0.92133E+03	0.40892E+04	0.13642E+05
-11.7	0.16872E+00	3.45654E+01	0.38596E+02	0.37466E+03	0.27611E+04	0.13642E+05
-11.6	0.17272E+00	3.43575E+01	0.36728E+02	0.23799E+03	0.14329E+04	0.13642E+05
-11.5	0.17672E+00	3.41496E+01	0.34860E+02	0.19932E+03	0.11047E+04	0.13642E+05
-11.4	0.18072E+00	3.39417E+01	0.32992E+02	0.16145E+03	0.77655E+04	0.13642E+05
-11.3	0.18472E+00	3.37338E+01	0.31124E+02	0.12358E+03	0.44773E+04	0.13642E+05
-11.2	0.18872E+00	3.35259E+01	0.29256E+02	0.85716E+03	0.11277E+04	0.13642E+05
-11.1	0.19272E+00	3.33180E+01	0.27388E+02	0.47954E+03	0.79981E+04	0.13642E+05
-11.0	0.19672E+00	3.31101E+01	0.25520E+02	0.10198E+03	0.47100E+04	0.13642E+05
-10.9	0.20072E+00	3.28922E+01	0.23652E+02	0.64233E+03	0.24322E+04	0.13642E+05
-10.8	0.20472E+00	3.26843E+01	0.21784E+02	0.28467E+03	0.11035E+04	0.13642E+05
-10.7	0.20872E+00	3.24764E+01	0.20016E+02	0.14690E+03	0.67573E+04	0.13642E+05
-10.6	0.21272E+00	3.22685E+01	0.18148E+02	0.81213E+03	0.34691E+04	0.13642E+05
-10.5	0.21672E+00	3.20606E+01	0.16280E+02	0.45535E+03	0.21409E+04	0.13642E+05
-10.4	0.22072E+00	3.18527E+01	0.14412E+02	0.29858E+03	0.12127E+04	0.13642E+05
-10.3	0.22472E+00	3.16448E+01	0.12544E+02	0.14181E+03	0.78395E+04	0.13642E+05
-10.2	0.22872E+00	3.14369E+01	0.10676E+02	0.65114E+03	0.45513E+04	0.13642E+05
-10.1	0.23272E+00	3.12290E+01	0.88086E+01	0.39347E+03	0.22631E+04	0.13642E+05
-10.0	0.23672E+00	3.10211E+01	0.69408E+01	0.23580E+03	0.12349E+04	0.13642E+05
-9.9	0.24072E+00	3.08132E+01	0.50730E+01	0.17803E+03	0.70617E+04	0.13642E+05
-9.8	0.24472E+00	3.06053E+01	0.42052E+01	0.12126E+03	0.37735E+04	0.13642E+05
-9.7	0.24872E+00	3.03974E+01	0.33374E+01	0.64489E+03	0.24853E+04	0.13642E+05
-9.6	0.25272E+00	3.01895E+01	0.24696E+01	0.17782E+03	0.11971E+04	0.13642E+05
-9.5	0.25672E+00	2.99816E+01	0.16018E+01	0.12105E+03	0.76830E+04	0.13642E+05
-9.4	0.26072E+00	2.97737E+01	0.73340E+00	0.64283E+03	0.43948E+04	0.13642E+05
-9.3	0.26472E+00	2.95658E+01	0.36562E+00	0.17551E+03	0.21066E+04	0.13642E+05
-9.2	0.26872E+00	2.93579E+01	0.19884E+00	0.11874E+03	0.11284E+04	0.13642E+05
-9.1	0.27272E+00	2.91500E+01	0.13216E+00	0.62077E+03	0.60062E+04	0.13642E+05
-9.0	0.27672E+00	2.89421E+01	0.65488E+00	0.15339E+03	0.37280E+04	0.13642E+05
-8.9	0.28072E+00	2.87342E+01	0.18820E+00	0.10662E+03	0.24498E+04	0.13642E+05
-8.8	0.28472E+00	2.85263E+01	0.12144E+00	0.59955E+03	0.11716E+04	0.13642E+05
-8.7	0.28872E+00	2.83184E+01	0.54677E+00	0.14288E+03	0.74324E+04	0.13642E+05
-8.6	0.29272E+00	2.81105E+01	0.18000E+00	0.10011E+03	0.41542E+04	0.13642E+05
-8.5	0.29672E+00	2.79026E+01	0.11333E+00	0.53344E+03	0.28760E+04	0.13642E+05
-8.4	0.30072E+00	2.76947E+01	0.46666E+00	0.13567E+03	0.15978E+04	0.13642E+05
-8.3	0.30472E+00	2.74868E+01	0.19999E+00	0.88999E+03	0.13196E+04	0.13642E+05
-8.2	0.30872E+00	2.72789E+01	0.13332E+00	0.42232E+03	0.94144E+04	0.13642E+05
-8.1	0.31272E+00	2.70710E+01	0.66654E+00	0.94555E+03	0.61362E+04	0.13642E+05
-8.0	0.31672E+00	2.68631E+01	0.10000E+00	0.46878E+03	0.38579E+04	0.13642E+05
-7.9	0.32072E+00	2.66552E+01	0.33322E+00	0.98101E+03	0.25797E+04	0.13642E+05
-7.8	0.32472E+00	2.64473E+01	0.16644E+00	0.51424E+03	0.12015E+04	0.13642E+05
-7.7	0.32872E+00	2.62394E+01	0.10000E+00	0.14845E+03	0.82372E+04	0.13642E+05
-7.6	0.33272E+00	2.60315E+01	0.33333E+00	0.64668E+03	0.55589E+04	0.13642E+05
-7.5	0.33672E+00	2.58236E+01	0.16666E+00	0.14112E+03	0.32770E+04	0.13642E+05
-7.4	0.34072E+00	2.56157E+01	0.10000E+00	0.61245E+03	0.20981E+04	0.13642E+05
-7.3	0.34472E+00	2.54078E+01	0.33333E+00	0.13855E+03	0.12202E+04	0.13642E+05
-7.2	0.34872E+00	2.51999E+01	0.16666E+00	0.65388E+03	0.84230E+04	0.13642E+05
-7.1	0.35272E+00	2.49920E+01	0.10000E+00	0.14581E+03	0.57438E+04	0.13642E+05
-7.0	0.35672E+00	2.47841E+01	0.33333E+00	0.72614E+03	0.39646E+04	0.13642E+05
-6.9	0.36072E+00	2.45762E+01	0.16666E+00	0.14314E+03	0.22854E+04	0.13642E+05
-6.8	0.36472E+00	2.43683E+01	0.10000E+00	0.79837E+03	0.15062E+04	0.13642E+05
-6.7	0.36872E+00	2.41604E+01	0.33333E+00	0.14365E+03	0.12273E+04	0.13642E+05
-6.6	0.37272E+00	2.39525E+01	0.16666E+00	0.86588E+03	0.94841E+04	0.13642E+05
-6.5	0.37672E+00	2.37446E+01	0.10000E+00	0.14478E+03	0.67949E+04	0.13642E+05
-6.4	0.38072E+00	2.35367E+01	0.33333E+00	0.83711E+03	0.41057E+04	0.13642E+05
-6.3	0.38472E+00	2.33288E+01	0.16666E+00	0.14584E+03	0.14265E+04	0.13642E+05
-6.2	0.38872E+00	2.31209E+01	0.10000E+00	0.87044E+03	0.94773E+04	0.13642E+05
-6.1	0.39272E+00	2.29130E+01	0.33333E+00	0.14477E+03	0.67181E+04	0.13642E+05
-6.0	0.39672E+00	2.27051E+01	0.16666E+00	0.83274E+03	0.40389E+04	0.13642E+05
-5.9	0.40072E+00	2.24972E+01	0.10000E+00	0.14587E+03	0.13500E+04	0.13642E+05
-5.8	0.40472E+00	2.22893E+01	0.33333E+00	0.83400E+03	0.87108E+04	0.13642E+05
-5.7	0.40872E+00	2.20814E+01	0.16666E+00	0.14470E+03	0.50216E+04	0.13642E+05
-5.6	0.41272E+00	2.18735E+01	0.10000E+00	0.83223E+03	0.23324E+04	0.13642E+05
-5.5	0.41672E+00	2.16656E+01	0.33333E+00	0.14583E+03	0.16532E+04	0.13642E+05
-5.4	0.42072E+00	2.14577E+01	0.16666E+00	0.83334E+03	0.10843E+04	0.13642E+05
-5.3	0.42472E+00	2.12500E+01	0.10000E+00	0.14584E+03	0.61541E+04	0.13642E+05
-5.2	0.42872E+00	2.09921E+01	0.33333E+00	0.83335E+03	0.34650E+04	0.13642E+05
-5.1	0.43272E+00	2.07842E+01	0.16666E+00	0.14585E+03	0.20758E+04	0.13642E+05
-5.0	0.43672E+00	2.05763E+01	0.10000E+00	0.83336E+03	0.14067E+04	0.13642E+05
-4.9	0.44072E+00	2.03684E+01	0.33333E+00	0.14586E+03	0.93775E+04	0.13642E+05
-4.8	0.44472E+00	2.01605E+01	0.16666E+00	0.83337E+03	0.56883E+04	0.13642E+05
-4.7	0.44872E+00	1.99526E+01	0.10000E+00	0.14587E+03	0.20091E+04	0.13642E+05
-4.6	0.45272E+00	1.97447E+01	0.33333E+00	0.83338E+03	0.14399E+04	0.13642E+05
-4.5	0.45672E+00	1.95368E+01	0.16666E+00	0.14588E+03	0.97107E+04	0.13642E+05
-4.4	0.46072E+00	1.93289E+01	0.10000E+00	0.83339E+03	0.60215E+04	0.13642E+05
-4.3	0.46472E+00	1.91210E+01	0.33333E+00	0.14589E+03	0.23323E+04	0.13642E+05
-4.2	0.46872E+00	1.89131E+01	0.16666E+00	0.83340E+03	0.17534E+04	0.13642E+05
-4.1	0.47272E+00	1.87052E+01	0.10000E+00	0.14590E+03	0.11845E+04	0.13642E+05
-4.0	0.47672E+0					