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Tables of the Confluent Hypergeometric Function $F(\frac{n}{2}, \frac{1}{2}; x)$ and Related Functions



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UNITED STATES DEPARTMENT OF COMMERCE • Charles Sawyer, *Secretary*

NATIONAL BUREAU OF STANDARDS • E. U. Condon, *Director*

Tables of the Confluent Hypergeometric Function $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ and Related Functions



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Foreword

The confluent hypergeometric function $F(\alpha, \gamma; x)$, a simple transformation of which is tabulated here for $\gamma=1/2$ and for a wide range of values of α and x , plays an important role in statistics, particularly in connection with the so-called analysis-of-variance tests. The confluent hypergeometric function appears in the probability distribution of the statistic used in the analysis-of-variance tests when the hypothesis to be tested is not true. Thus, the tabulation of this function is needed for the computation of the power of the analysis-of-variance tests. For details in this connection, the reader is referred to a paper by P. C. Tang, The power function of the analysis of variance tests, Stat. Research Mem. **2** (1938), and a paper by E. Lehmer, Inverse tables of probabilities of errors of the second kind, Ann. Math. Stat. **15** (1944).

The parameters α and γ of the confluent hypergeometric function $F(\alpha, \gamma; x)$ correspond to the two degrees of freedom associated with each analysis-of-variance test. If one of the degrees of freedom is equal to one, the analysis-of-variance test reduces to the so-called t -test. In the case of the t -test, the parameter γ takes the value $1/2$ in the formula given in Lehmer's paper. Thus, tables covering the case $\gamma=1/2$, as given here, facilitate the construction of extensive tables of the power of the t -test that go considerably beyond the tables presently available.

A table of the confluent hypergeometric function when $\gamma=1/2$ is needed also for the construction of the so-called sequential t -test. As a matter of fact, the present table is a byproduct of a table prepared by the Computation Laboratory of the National Bureau of Standards at the request of the Statistical Research Group of Columbia University, for the purpose of facilitating the construction of the sequential t -test. Sequential analysis is a newly developed method of statistical inference whose main feature is that the number of observations required for the test procedure is not determined in advance but is made dependent on the outcome of the observations. In a sequential test, a certain function of the observations is computed at each stage of the experiment and the decision whether or not experimentation be continued depends on the value of this function. For the sequential t -test this function of the observations can be expressed in terms of the confluent hypergeometric function with $\gamma=1/2$.

The present tables, with their high degree of accuracy, will greatly facilitate the construction of a number of tables needed in connection with various important statistical tests. Statisticians will welcome these tables as a real contribution to their field.

ABRAHAM WALD.

*Department of Mathematical Statistics,
Columbia University, New York, N. Y.
July 1947.*

Introduction

Scope of the Tables

The present table is an outgrowth of the tabulation of the function z determined by the equation

$$L = \log_e F\left(\frac{n}{2}, \frac{1}{2}; \frac{\delta^2 z}{2}\right) - \frac{n\delta^2}{2}$$

for various values of L , n , and δ , where $F(\alpha, \gamma; x)$ is the well-known confluent hypergeometric function. This table of z was published in a report by the Mathematical Tables Project submitted to the Applied Mathematics Panel in July 1945. A discussion of some possible applications of the present table in the field of statistics is contained in the accompanying foreword by Professor Wald.

Although the original objective was the tabulation of the natural logarithm of the confluent hypergeometric function $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ it was deemed desirable to tabulate the ratio $\log_e F\left(\frac{n}{2}, \frac{1}{2}; x\right)/\sqrt{2nx}$, which is more interpolable than the original function and has the added advantage of being of the order of magnitude of unity over the major part of the range of the parameters x and n . The bulk of the present table is therefore devoted to the tabulation of this function for

$$x=0.10(.01)0.60(.1)2(.2)7(1)45(5)100; n=3(2)201.$$

In the region $x=0(.01)0.10; n=3(2)41$, the function $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ has been chosen for tabulation, since it differs satisfactorily and does not vary appreciably. For the sake of completeness, the same function has also been tabulated up to $n=201$, even though beyond $n=41$, the entries do not possess the desirable features previously mentioned. In addition, over the region $x=0(.01).10; n=43(2)201$ the auxiliary function $F\left(\frac{n}{2}, \frac{1}{2}; x\right)/\cosh \sqrt{(2n-1)x}$ has been tabulated for interpolation purposes.

Analytical Properties

The confluent hypergeometric series

$$F(\alpha, \gamma; x) = \sum_{j=0}^{\infty} \frac{\Gamma(\gamma)\Gamma(\alpha+j)}{\Gamma(\alpha)\Gamma(\gamma+j)} \frac{x^j}{j!} \quad (1)$$

is a fundamental solution of the differential equation

$$x \frac{d^2 F}{dx^2} + (\gamma - x) \frac{dF}{dx} - \alpha F = 0 \quad (2)$$

satisfying the boundary conditions

$$F(\alpha, \gamma; 0) = 1; \left\{ \frac{\partial}{\partial x} F(\alpha, \gamma; x) \right\}_{x=0} = \frac{\alpha}{\gamma} \quad (3)$$

From (1) and the definition of the Beta function it can be shown [1]¹ that

$$F(\alpha, \gamma; x) = \frac{\Gamma(\gamma)}{\Gamma(\gamma-\alpha)\Gamma(\alpha)} \int_0^1 e^{xt} (1-t)^{\gamma-\alpha-1} t^{\alpha-1} dt. \quad (4)$$

If in (4) we put $t=1-(u/x)$, then

$$F(\alpha, \gamma; x) = \frac{x^{\alpha-\gamma} e^{x^2} \Gamma(\gamma)}{\Gamma(\gamma-\alpha)\Gamma(\alpha)} \int_0^x e^{-u} u^{\gamma-\alpha-1} \left(1 - \frac{u}{x}\right)^{\alpha-1} du, \quad (5)$$

from which one can obtain the asymptotic expansion

$$F(\alpha, \gamma; x) \sim \frac{\Gamma(\gamma)(-x)^{-\alpha}}{\Gamma(\alpha)} \sum_{r=0}^{\infty} \frac{\Gamma(r+\alpha)}{r! \Gamma(\gamma-\alpha-r)} x^r + \frac{x^{\alpha-\gamma} e^{x^2} \Gamma(\gamma)}{\Gamma(\gamma-\alpha)\Gamma(\alpha)} \sum_{r=0}^{\infty} \frac{(-1)^r \Gamma(\alpha)\Gamma(\gamma-\alpha+r)}{r! \Gamma(\alpha-r)} x^r. \quad (6)$$

The following well-known relations can be derived with the aid of (1), (2), and (4).

$$F(\alpha, \gamma; x) = e^x F(\gamma-\alpha, \gamma; -x) \text{ (Kummer's formula)}. \quad (7)$$

$$xF(\alpha+1, \gamma+1; x) = \gamma \{ F(\alpha+1, \gamma; x) - F(\alpha, \gamma; x) \}. \quad (8)$$

$$\alpha F(\alpha+1, \gamma+1; x) = (\alpha-\gamma) F(\alpha, \gamma+1; x) + \gamma F(\alpha, \gamma; x). \quad (9)$$

$$(\alpha+x) F(\alpha+1, \gamma+1; x) = (\alpha-\gamma) F(\alpha, \gamma+1; x) + \gamma F(\alpha+1, \gamma; x). \quad (10)$$

$$\alpha \gamma F(\alpha+1, \gamma; x) = \gamma(\alpha+x) F(\alpha, \gamma; x) - x(\gamma-\alpha) F(\alpha, \gamma+1; x). \quad (11)$$

$$\alpha F(\alpha+1, \gamma; x) = (x+2\alpha-\gamma) F(\alpha, \gamma; x) + (\gamma-\alpha) F(\alpha-1, \gamma; x). \quad (12)$$

$$(\gamma-\alpha)x F(\alpha, \gamma+1; x) = \gamma(x+\gamma-1) F(\alpha, \gamma; x) + \gamma(1-\gamma) F(\alpha, \gamma-1; x). \quad (13)$$

$$\frac{d}{dx} F(\alpha, \gamma; x) = \frac{\alpha}{\gamma} F(\alpha+1, \gamma+1; x). \quad (14)$$

¹ Figures in brackets indicate the literature references given on p. XVI.

$$\frac{d}{dx} \left\{ \log_e F(\alpha, \gamma; x) \right\} = \frac{1}{\gamma-x} + \frac{\frac{x}{\alpha}}{\alpha+1} + \frac{\frac{x}{\alpha+1}}{\alpha+2} + \dots \quad (15)$$

For the special case $\alpha=n/2; \gamma=1/2$ (7) becomes

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = e^x F\left(\frac{1-n}{2}, \frac{1}{2}; -x\right) = e^x \left\{ 1 + (n-1)x + \frac{(n-1)(n-3)}{1 \cdot 3} \frac{x^2}{2!} + \dots \right\}, \quad (16)$$

whence

$$F\left(\frac{1}{2}, \frac{1}{2}; x\right) = e^x; F\left(\frac{3}{2}, \frac{1}{2}; x\right) = e^x(1+2x); F\left(\frac{5}{2}, \frac{1}{2}; x\right) = e^x \left(1+4x+\frac{4x^2}{3}\right). \quad (17)$$

For computational purposes it is convenient to define the function

$$g_n = \frac{F_n}{F_{n-2}}; F_n \equiv F\left(\frac{n}{2}, \frac{1}{2}; x\right). \quad (18)$$

From (12), (17), and (18) it follows that for n odd and positive

$$g_3 = 1+2x; g_5 = \frac{1+4x+\frac{4x^2}{3}}{1+2x}. \quad (19)$$

$$g_{n+2} = \frac{2x+2n-1}{n} \frac{n-1}{ng_n}. \quad (20)$$

$$g_{n+4} = \frac{g_n[(2x+2n-1)(2x+2n+3) - n(n+1)] - (n-1)(2x+2n+3)}{n(n+2)g_n g_{n+2}}. \quad (21)$$

It can be shown that for any $x > 0$, g_n is a monotonically decreasing function of n . As $n \rightarrow \infty$, (20) may be replaced by

$$g_n = 2 - \frac{1}{g_n} \text{ or } g_n^2 - 2g_n + 1 = 0, \quad (22)$$

hence

$$\lim_{n \rightarrow \infty} g_n = 1. \quad (23)$$

For $\alpha=n/2$ and $\gamma=1/2$, (2) becomes

$$2x \frac{d^2 F}{dx^2} + (1-2x) \frac{dF}{dx} - nF = 0. \quad (24)$$

Approximations to $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ by the Methods of Carlini and Meissel

In order to obtain the dominant behavior of $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ for n very large and greater than x , it is convenient to make the substitution

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = e^{\frac{x}{2}} x^{-1/4} v(x), \quad (25)$$

where $v(x)$ satisfies the following differential equation and boundary condition

$$16x^2 v'' + (3+4x-4x^2-8nx)v = 0; \left\{ x^{-1/4} v(x) \right\}_{x=0} = 1. \quad (26)$$

It may be shown by a method first used by Carlini [2] that if

$$v'' + p(x)v = 0; \quad p(x) \neq 0, \quad (27)$$

then

$$v(x) \sim \{A \exp(\int \sqrt{-p} dx) + B \exp(-\int \sqrt{-p} dx)\} \div |p(x)|^{1/4}, \quad (28)$$

where A and B are arbitrary constants to be determined from the boundary conditions.

In quantum mechanics (28) is frequently referred to as the Jeffreys-Brillouin-Kramers-Wentzel (JBKW) approximation [3]. In the case of (26) we have

$$\sqrt{-p} = \frac{\sqrt{8nx + 4x^2 - 4x - 3}}{4x} \sim \frac{\sqrt{8nx}}{4x} = \frac{\sqrt{2n}}{2x^{1/2}},$$

and

$$\int \sqrt{-p} dx \sim \sqrt{2nx},$$

so that

$$v(x) \sim \frac{Ae^{\sqrt{2nx}} + Be^{-\sqrt{2nx}}}{x^{-1/4}}.$$

If A and B are chosen so that the function $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ satisfies the required boundary conditions in (3), we get $A=B=\frac{1}{2}$, and therefore

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) \sim e^{\frac{x}{2}} \cosh \sqrt{2nx} \sim \frac{e^{\sqrt{2nx}}}{2}. \quad (29)$$

It is readily ascertained that this approximation to $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ has the correct behavior as $n \rightarrow \infty$ (x fixed).

The adequacy of the approximation (29) may be ascertained as follows:

Let

$$\alpha = \frac{n}{2}; \quad \gamma = \frac{1}{2}; \quad F\left(\frac{n}{2}, \frac{1}{2}; x\right) \equiv F_n.$$

Then (12) becomes

$$nF_{n+2} - (2x + 2n - 1)F_n + (n - 1)F_{n-2} = 0. \quad (30)$$

If F_{n-2}^* , F_n^* , and F_{n+2}^* denote approximations to F_{n-2} , F_n , and F_{n+2} obtained with the aid of (29), then the extent of the agreement between the starred quantities and the values obtained from (30) when two of the F 's have been replaced by the corresponding starred quantities is a strong indication of the adequacy of the approximations defined by (29). It should be noted, however, that the scheme just described will not detect any systematic errors in the F 's involving an arbitrary constant factor.

In the subsequent developments it will be convenient to make the substitutions

$$x = y^2; \quad F\left(\frac{n}{2}, \frac{1}{2}; y^2\right) = e^{\frac{y^2}{2}} v(y). \quad (31)$$

In view of (2) and (3), it follows that

$$v'' + (1 - 2n - y^2)v = 0; \quad [v(y)]_{y=0} = 1; \quad [v'(y)]_{y=0} = 0. \quad (32)$$

A generalization of (28) first employed by Meissel [4] in connection with approximations to $J_n(x)$ leads to

$$v(y) \sim \frac{A \exp(\int \sqrt{-p} dy + \varphi_1 + \varphi_2 + \dots) + B \exp(-\int \sqrt{-p} dy - \varphi_1 - \dots)}{|p(y)|^{1/4}}, \quad (33)$$

where

$$\varphi_1 = \int \frac{4pp'' - 5(p')^2}{32\sqrt{-1}p^{5/2}} dy$$

$$\varphi_2 = \int \frac{4p^2p''' + 15(p')^3 - 18p'p''p}{64p^4} dy.$$

Since for (32)

$$\sqrt{-p} = \sqrt{y^2 + k^2}; \quad k^2 = 2n - 1,$$

it follows that

$$\int \sqrt{-p} dy = \frac{k^2}{2} \left\{ \frac{y \sqrt{y^2 + k^2}}{k^2} + \log \frac{y + \sqrt{y^2 + k^2}}{k} \right\} = \varphi_{-1} \text{ (say)}$$

$$\varphi_1 = \frac{3y^2 - 2k^2}{8(y^2 + k^2)^{3/2}}; \quad \varphi_2 = \frac{9k^2y - 6y^3}{8(y^2 + k^2)^4}; \quad \dots$$

Reasoning similar to that used in deriving the approximation (29) leads to

$$F\left(\frac{n}{2}, \frac{1}{2}; y^2\right) \sim \frac{1}{\cosh\left(\frac{1}{4k^3}\right)} \exp\left\{\frac{y^2}{2} - \frac{1}{4} \log \frac{y^2 + k^2}{k^2}\right\} \cosh(\varphi_{-1} + \varphi_1 + \varphi_2). \quad (34)$$

It can be shown from (6) and (33) that for large n and y sufficiently large

$$F\left(\frac{n}{2}, \frac{1}{2}; y^2\right) \sim \frac{\sqrt{\pi}}{\Gamma\left(\frac{n}{2}\right)} \exp\left\{\frac{k^2}{4} \log \frac{k^2}{4e} + \frac{y^2}{2} + \varphi_{-1} + \varphi_1 + \varphi_2 - \frac{1}{4} \log(y^2 + k^2)\right\}. \quad (35)$$

The accuracy of the values computed from (34) and (35) may be established by the method previously discussed and based on the use of (30).

Other Approximations to $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ Derived From Appropriate Integral Equations

We shall consider five cases depending upon the relative magnitudes of the variables n and y .

Case I: $y^2 < |2n - 1|$.

In this case it is convenient to write the differential equation in (32) in the form

$$v'' + (1 - 2n)v = y^2v. \quad (36)$$

If the right-hand member of (36) be considered provisionally as a known function of y , the solution of this equation may be obtained by the method of variation of parameters in the form

$$v(y) = A \sinh ky + B \cosh ky + \int_0^y \frac{\xi^2 v(\xi)}{W(v_1, v_2)} \sinh\{k(y - \xi)\} d\xi, \quad (37)$$

where $k = \sqrt{2n - 1}$, and $W(v_1, v_2)$ is the Wronskian corresponding to the independent solutions $v_1 = \sinh ky$ and $v_2 = \cosh ky$. If we take into account the boundary conditions in (32) it is readily seen that $A = 0$ and $B = 1$; moreover, $W(v_1, v_2) = k$. Hence (37) leads to the Volterra integral equation

$$v(y) = \cosh ky + \frac{1}{k} \int_0^y \xi^2 v(\xi) \sinh\{k(y - \xi)\} d\xi. \quad (38)$$

Upon solving equation (38) by the Liouville-Neumann method of successive substitutions [5], we obtain

$$v(y) = \cosh ky \sum_{\nu=0}^{\infty} C_{2\nu}(k) y^{2\nu} + \sinh ky \sum_{\nu=0}^{\infty} S_{2\nu+1}(k) y^{2\nu+1}, \quad (39)$$

where

$$C_0(k) = 1; \quad C_2(k) = -\frac{1}{4k^2} + \frac{19}{32k^6} + \dots; \quad C_4(k) = \frac{19}{96k^4} + \dots; \quad C_6(k) = \frac{1}{72k^2} + \dots; \dots$$

$$S_1(k) = \frac{1}{4k^3} - \frac{19}{32k^7} + \dots; \quad S_3(k) = \frac{1}{6k} - \frac{19}{48k^5} + \dots; \quad S_5(k) = -\frac{1}{15k^3} + \dots; \dots$$

An alternative expression for $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ may be obtained by assuming that

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = e^{\frac{x}{2}} (1 + a_1 x + a_2 x^2 + \dots) \cosh \sqrt{(2n-1)x}. \quad (40)$$

When $\alpha = n/2$ and $\gamma = 1/2$, (1) becomes

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = 1 + nx + \frac{n(n+2)}{1 \cdot 3} \frac{x^2}{2!} + \frac{n(n+2)(n+4)}{1 \cdot 3 \cdot 5} \frac{x^3}{3!} + \dots \quad (41)$$

Upon expanding the exponential and the factor $\cosh \sqrt{(2n-1)x}$ in (40), multiplying out and equating coefficients of like powers of x in the preceding equations, it can be shown that

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = e^{\frac{x}{2}} \left(1 + \frac{x^2}{12} - \frac{(2n-1)x^3}{45} + \dots\right) \cosh \sqrt{(2n-1)x}. \quad (42)$$

Case II. $|1-y^2| < 2n$.

The differential equation in (32) may be written in the form

$$v'' - 2nv = (y^2 - 1)v. \quad (43)$$

Proceeding in the same manner as in the previous case, it can be shown that

$$v(y) = \cosh ky + \frac{1}{k} \int_0^y (\xi^2 - 1)v(\xi) \sinh \{k(y - \xi)\} d\xi, \quad (44)$$

where $k = \sqrt{2n}$; whence

$$v(y) \sim \left\{1 - \frac{y^2}{4k^2}\right\} \cosh ky + \left\{\left(\frac{1}{4k^3} - \frac{1}{2k}\right)y + \frac{y^3}{6k}\right\} \sinh ky. \quad (45)$$

An expression analogous to (42) may be easily obtained by a method similar to the above but will not be given here.

Case III. $|2n + y^2| < 1$.

The differential equation in (32) is now written in the form

$$v'' + v = (2n + y^2)v. \quad (46)$$

The solution of (46) is

$$v(y) \sim \left\{1 + \frac{y^2}{4}\right\} \cos y + \left\{\left(n - \frac{1}{4}\right)y + \frac{y^3}{6}\right\} \sin y. \quad (47)$$

As in case I, an alternative expression for $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ may be derived by putting

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = e^{\frac{x}{2}} (1 + a_1 x + a_2 x^2 + \dots) \cos \sqrt{x}.$$

Case IV: $2n < |1 - y^2|$.

The differential equation in (32) is now written in the form

$$v'' + (1 - y^2)v = 2nv. \quad (48)$$

Two independent solutions of the homogeneous equation corresponding to (48) are

$$\bar{v}_1(y) = e^{-\frac{y^2}{2}}; \quad \bar{v}_2(y) = e^{-\frac{y^2}{2}} \int_0^y e^{\xi^2} d\xi. \quad (49)$$

Since the Wronskian, $W(\bar{v}_1, \bar{v}_2) = 1$, and since $v(0) = 1$; $v'(0) = 0$, the above technique leads to

$$e^{\frac{y^2}{2}} v(y) = 1 + 2n \int_0^y e^{-\xi^2} \int_{\xi}^y e^{\xi^2} dt d\xi + O(n^2). \quad (50)$$

Let us assume a solution in the form

$$e^{\frac{y^2}{2}} v(y) = 1 + nv_1(y) + n^2 v_2(y) + \dots \quad (51)$$

Upon substituting (51) into (48) and equating coefficients of like powers of n , we get

$$v_1'' - 2yv_1' - 2 = 0; v_n'' - 2yv_n' - 2v_{n-1} = 0; n = 2, 3, \dots \quad (52)$$

Although formal solutions of (52) may be easily obtained, these solutions are not convenient for purposes of computation.

The following alternative procedure will therefore be described. From (31) and (41) we get

$$e^{\frac{y^2}{2}} v(y) = F\left(\frac{n}{2}, \frac{1}{2}; y^2\right) = 1 + ny^2 + \frac{n(n+2)}{1 \cdot 3} \frac{y^4}{2!} + \frac{n(n+2)(n+4)}{1 \cdot 3 \cdot 5} \frac{y^6}{3!} + \dots \quad (53)$$

Upon equating coefficients of like powers of n in (51) and (53), it can be shown that

$$\left. \begin{aligned} v_1(y) &= y^2 + \frac{1!2^3}{4!} y^4 + \frac{2!2^5}{6!} y^6 + \frac{3!2^7}{8!} y^8 + \frac{4!2^9}{10!} y^{10} + \dots \\ v_2(y) &= \frac{2^2}{4!} y^4 + \frac{(6)2^3}{6!} y^6 + \frac{(44)2^4}{8!} y^8 + \frac{(400)2^5}{10!} y^{10} + \dots \\ v_3(y) &= \frac{2^3}{6!} y^6 + \frac{(12)2^4}{8!} y^8 + \frac{(140)2^5}{10!} y^{10} + \dots \\ v_4(y) &= \frac{2^4}{8!} y^8 + \frac{(20)2^5}{10!} y^{10} + \dots \\ v_5(y) &= \frac{2^5}{10!} y^{10} + \dots \end{aligned} \right\} \quad (54)$$

Further terms in the series expressions for the v_n 's may be obtained as follows:

Differentiating the second equation in (52) $2p-2$ times in succession by Leibnitz' rule, and writing $d^n/dy^n = D^n$, we get

$$\{D^{2p}v_n\}_{y=0} = 4(p-1) \{D^{2p-2}v_n\}_{y=0} + 2\{D^{2p-2}v_{n-1}\}_{y=0}. \quad (55)$$

(It will be noted that the v_n 's are even functions of y , so that all the odd-order derivatives vanish.)

An examination of (53) leads to the conclusion that the first term in the expansion of $v_n(y)$ is $\{2^n/(2n)!\}y^{2n}$. This fact taken in conjunction with (55) makes it possible to obtain successively all the terms of $v_n(y)$.

It may be of interest to note that

$$v_n(x) = \sum_{\nu=n}^{\infty} \frac{(-1)^{n+\nu} x^{\nu} 2^{\nu-n} (\nu-1)! B_{\nu-n}^{(\nu)}}{(n-1)!(\nu-n)!(2\nu)!}; x = y^2, \quad (56)$$

where the $B_{\nu-n}^{(\nu)}$ are Bernoulli's numbers of order ν [6].

As a check on the correctness of the expansions in (54), it may be remarked that from (53) it follows that

$$e^{y^2} = 1 + v_1(y) + v_2(y) + \dots$$

For moderate values of y^2 the series (54) are rapidly convergent. The computation of $v_1(y)$, the least

rapidly convergent series in (54), may be facilitated by expressing it in terms of tabulated functions in the following manner:

From (50) it is clear that

$$v_1(y) = 2 \int_0^y e^{-\xi^2} \int_{\xi}^y e^{t^2} dt d\xi = \sqrt{\pi} \operatorname{erf}(y) e^{y^2} G(y) - 2 \int_0^y G(\xi) d\xi, \quad (57)$$

where

$$\operatorname{erf}(y) = \frac{2}{\sqrt{\pi}} \int_0^y e^{-t^2} dt; \quad G(y) = e^{-y^2} \int_0^y e^{t^2} dt.$$

Excellent tables of $G(y)$ and $\int_0^y G(\xi) d\xi$ have been computed by J. B. Rosser [7].

It can be shown that for x very large

$$v_1(x) \sim \frac{C_2 \sqrt{\pi} e^x}{2\sqrt{x}}; \quad v_2(x) \sim \frac{e^x \sqrt{\pi}}{4\sqrt{x}} [(1 + C_2) \log_e x + C_3], \quad (58)$$

where the C 's are "Bourguet numbers" [8].

Case V: $y^2 > |2n-1|$.

If (32) is written in the form

$$v'' - y^2 v = (2n-1)v, \quad (59)$$

then the solution of (59) satisfies the Volterra integral equation

$$v(y) = \frac{\Gamma\left(\frac{3}{4}\right)}{\sqrt{2}} y^{1/2} I_{-1/4}\left(\frac{y^2}{2}\right) - \frac{\pi k}{2\sqrt{2}} \int_0^y v(\xi) \xi^{1/2} y^{1/2} \left\{ I_{1/4}\left(\frac{\xi^2}{2}\right) I_{-1/4}\left(\frac{y^2}{2}\right) - I_{1/4}\left(\frac{y^2}{2}\right) I_{-1/4}\left(\frac{\xi^2}{2}\right) \right\} d\xi, \quad (60)$$

where $k=2n-1$ and $I_{1/4}(x)$ is the modified Bessel function of order $1/4$.

The application to (60) of the Liouville-Neumann method of successive substitutions suggests the expansion

$$v(y) = \sum_{j=0}^{\infty} v_j(y) k^j; \quad v_0(y) = \frac{\Gamma\left(\frac{3}{4}\right)}{\sqrt{2}} y^{1/2} I_{-1/4}\left(\frac{y^2}{2}\right). \quad (61)$$

Substituting the expansion in (61) into (59) and equating coefficients of like powers of k , we get

$$v_0'' - y^2 v_0 = 0; \quad v_j'' - y^2 v_j - v_{j-1} = 0; \quad j=1, 2, \dots \quad (62)$$

The system (62) may be treated in the same manner as the corresponding system (52) of case IV. It can be shown that

$$v_1(x) = \frac{\sqrt{2}}{4} \sum_{i=1}^{\infty} \frac{2^{2i}}{2i-1} D^{2i-1} v_0(x); \quad D = \frac{d}{dx}; \quad y^2 = x. \quad (63)$$

Since $v_0(x)$ is expressible in terms of $I_{-1/4}\left(\frac{x}{2}\right)$, the successive derivatives of $v_0(x)$ may be obtained with the aid of the well-known recurrence formula²

$$\frac{d}{dx} I_\nu(x) = \frac{1}{2} [I_{\nu+1}(x) + I_{\nu-1}(x)].$$

The expansion (63) was obtained from the contour integral representation

$$v_j(y) = \frac{1}{2\pi i} \oint \frac{v(y)}{k^{j+1}} dk$$

in conjunction with (31) and (4).

Further analytical details concerning the above developments will be found in a forthcoming publication.

² An extensive table of Bessel Functions of Order $\pm 1/4$ is contained in a forthcoming volume prepared by the Computation Laboratory, National Bureau of Standards.

Expansion of Confluent Hypergeometric Functions in terms of Bessel Functions of Integral Order ³

It is a well-known fact [9] that any absolutely convergent power series can be expressed as a series of Bessel functions of integral order. We can therefore assume ⁴

$$F(\alpha, \gamma; x) = \sum_{k=0}^{\infty} \frac{\Gamma(\gamma)\Gamma(\alpha+k)}{\Gamma(\alpha)\Gamma(\gamma+k)} \frac{x^k}{k!} = \sum_{k=0}^{\infty} c_k I_k(x). \quad (64)$$

The boundary conditions yield the first two coefficients $c_0=1$, $c_1=\frac{2\alpha}{\gamma}$. We can thus write

$$F(\alpha, \gamma; x) = I_0(x) + \frac{2\alpha}{\gamma} I_1(x) + \sum_{k=2}^{\infty} c_k I_k(x). \quad (65)$$

The coefficients c_k can be calculated from (64) by the formula, relating the coefficients in the expansion in terms of Bessel functions with the coefficients in the power series.

A simpler method is to make use of the recurrence relation (14)

$$\frac{d}{dx} F(\alpha, \gamma; x) = \frac{\alpha}{\gamma} F(\alpha+1, \gamma+1; x)$$

satisfied by the confluent hypergeometric function. Substituting in formula (65), $\alpha+1$ and $\gamma+1$ for α and γ , respectively, we obtain

$$F(\alpha+1, \gamma+1; x) = I_0(x) + 2 \frac{\alpha+1}{\gamma+1} I_1(x) + \sum_{k=2}^{\infty} d_k I_k(x), \quad (66)$$

where d_k is obtained from c_k by replacing α and γ by $\alpha+1$ and $\gamma+1$, respectively. In view of the recurrence relations

$$\left. \begin{aligned} 2I'_k(x) &= I_{k-1}(x) + I_{k+1}(x) \\ I'_0(x) &= I_1(x) \end{aligned} \right\} \quad (67)$$

satisfied by the Bessel functions $I_k(x)$, equation (14) becomes

$$\left. \begin{aligned} \frac{\alpha}{\gamma} I_0(x) + I_1(x) + \frac{\alpha}{\gamma} I_2(x) + \frac{1}{2} \sum_{k=2}^{\infty} c_k [I_{k-1}(x) + I_{k+1}(x)] &= \\ \frac{\alpha}{\gamma} I_0(x) + 2 \frac{\alpha(\alpha+1)}{\gamma(\gamma+1)} I_1(x) + \frac{\alpha}{\gamma} \sum_{k=2}^{\infty} d_k I_k(x) & \end{aligned} \right\} \quad (68)$$

Equating coefficient of $I_k(x)$ ($k=1, 2, \dots$) on both sides of the equation, we get the following recurrence relations.

$$\left. \begin{aligned} \frac{1}{2} c_2 + 1 &= 2 \frac{\alpha(\alpha+1)}{\gamma(\gamma+1)}; \\ \frac{\alpha}{\gamma} + \frac{1}{2} c_3 &= \frac{\alpha}{\gamma} d_2; \text{ where } d_2 = 4 \frac{(\alpha+1)(\alpha+2)}{(\gamma+1)(\gamma+2)} - 2; \\ \frac{1}{2} (c_{k+1} + c_{k-1}) &= \frac{\alpha}{\gamma} d_k, \quad k \geq 3 \end{aligned} \right\} \quad (69)$$

³ This section was written by Dr. Meyer Karlin.

⁴ We chose the functions $I_k(x)$ rather than $J_k(x)$, because the functions $I_k(x)$ and $F(\alpha, \gamma; x)$ increase without limit as $x \rightarrow \infty$, whereas the functions $J_k(x)$ oscillate between -1 and $+1$.

As an illustration of the above, let $\alpha=41/2$, $\gamma=1/2$, then we obtain $c_0=1$, $c_1=82$, $c_2=7046/3$, $c_3=42066$, $c_4=11734570/21$, $c_5=17927414/3$, $c_6=4156610842/77$, $c_7=66784838795/143$, etc., and therefore,

$$F\left(\frac{41}{2}, \frac{1}{2}; x\right) = I_0(x) + 82I_1(x) + \frac{7046}{3}I_2(x) + 42066I_3(x) + \frac{11734570}{21}I_4(x) + \frac{17927414}{3}I_5(x) + \left. \begin{aligned} &\frac{4156610842}{77}I_6(x) + \frac{66784838795}{143}I_7(x) + \dots \end{aligned} \right\} \quad (70)$$

Eight terms in this expansion yield $F\left(\frac{41}{2}, \frac{1}{2}; .2\right) = 30.97745$ as compared with 30.97819 obtained from these tables and computed by a method different than that here described. To obtain a comparable accuracy from the power series, hundreds of terms would be needed.

Method of Computation

The computation of the functions $\log_e F\left(\frac{n}{2}, \frac{1}{2}; x\right) \equiv \log_e F_n$ was based on the computation of the functions g_n defined in (18).

Specifically, the g_n 's were generated by means of (20) and checked by (21) starting with the values of g_3 and g_5 defined in (19).

Having computed the logarithms of the g_n 's, the computation of the logarithms of the F_n 's proceeded in accordance with the scheme

$$\log F_3 = \log g_3 + \log F_1 = \log g_3 + x$$

$$\log F_5 = \log g_5 + \log F_3$$

$$\log F_7 = \log g_7 + \log F_5$$

⋮

$$\log F_{2n+1} = \log g_{2n+1} + \log F_{2n-1}.$$

The computed values of $\log_e F_{2n+1}$ were checked by differencing both for fixed x and running n and for fixed n and running x . These values were converted into the corresponding values of the function $\log_e F_n/\sqrt{2nx}$.

The required values of F_{2n+1} were obtained from the relation

$$F_{2n+1} = g_{2n+1}g_{2n-1} \dots g_3e^x,$$

which follows immediately from the definition of the g_n 's. Since in the recurrence relation (20) the first term in the second member may be computed to any desired degree of accuracy and since all the g_n 's are essentially of the order of magnitude of unity, and approach unity from above, it may be shown that

$$|E(g_{2n+1})| \cong |E(g_{2n-1})| \cong |E(g_{2n-3})| \cong \dots,$$

where $E(g_i)$ means the error in g_i .

In computing the g_n 's from (20) the first term in the second member was carried to 10 or more significant figures, whereas the second term was carried to 10 decimal places; accordingly, the computed g_n 's may be assumed to be correct to within 1 unit in the ninth decimal place.

As g_n is of the form $1 + \epsilon$, where $\epsilon \rightarrow 0$ as $n \rightarrow \infty$, it follows that the error in $\log_e g_n$ is essentially the same as the error in g_n .

Furthermore, as

$$\log F_{2n+1} = \log g_{2n+1} + \log g_{2n-1} + \dots + \log g_3 + x,$$

it follows that the maximum error in $\log F_{2n+1}$ will not exceed n units of the ninth decimal place. In particular, the error in $\log_e F_{201}$ will not exceed 1 unit in the seventh decimal place.

As to the errors in $\log F_n/\sqrt{2nx}$, it is clear that $\sqrt{2nx}$ may be considered exact with the results that the relative error in this ratio is the same as in the function $\log F_n$. From the method of generating the F_n 's themselves it is easily seen that the relative error in the F_n 's is no larger than 10^{-7} .

The entries in the present tables were checked by differencing wherever possible and further checked by means of various formulas mentioned in the previous sections. It is believed that the entries are correct to within 1 unit in the last significant figure given.

Interpolation

If $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ is required for general values of n and x within the range of the tables but not coinciding with tabular arguments, bivariate interpolation must be resorted to in order to obtain the desired value. The charts on the pages following indicate the order of the Lagrangian interpolation formula required for interpolating in the x - and n -directions in various regions. The following example illustrates the use of the charts in conjunction with a table of Lagrangian interpolation ⁵ coefficients.

Problem: Required the value of $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ for $n=27$ and $x=0.0875$.

Solution: From the first chart it is apparent that the values of n and x fall in region I. Furthermore, since $n=27$ is a tabular value, interpolation is required only in the x -direction. According to the chart for region I with n fixed and x variable, a five-point Lagrangian formula is needed to obtain six decimal places. Let x_0 be the argument in the table, just less than x , and let h be the tabular interval. Then $x=x_0+ph$, where $p=(x-x_0)/h$. Let u_k be the functional value corresponding to x_0+kh . The five-point Lagrangian formula may then be put into the form:

$$u(x_0+ph) = A_{-2}u_{-2} + A_{-1}u_{-1} + A_0u_0 + A_1u_1 + A_2u_2,$$

where

$$A_{-2} = \frac{p(p^2-1)(p-2)}{24}; \quad A_{-1} = -\frac{p(p-1)(p^2-4)}{6}; \quad A_0 = \frac{(p^2-1)(p^2-4)}{4}$$

$$A_1 = -\frac{p(p+1)(p^2-4)}{6}; \quad A_2 = \frac{p(p^2-1)(p+2)}{24}.$$

The following are the values of the A_k corresponding to $p=0.75$, to 10 decimal places, taken from the volume of Lagrangian interpolation coefficients previously referred to: $A_{-2}=0.0170898438$; $A_{-1}=-0.1074218750$; $A_0=0.3759765625$; $A_1=0.7519531250$; $A_2=-0.0375976563$. Since $x_0=0.08$, the entries corresponding to x_k are the following: $u_{-2}=3.152374$; $u_{-1}=3.630021$; $u_0=4.147154$; $u_1=4.706053$; $u_2=5.309103$. Since the entries have but seven significant figures, it would be ample to use coefficients to seven decimal places; however, when a 10-bank calculating machine is available, it is perhaps easier for some computers to read the 10-place coefficients from the book, rather than to drop the last two or three places. The computation follows:

$$\begin{aligned} u(x_0+ph) &= (0.0170898438)(3.152374) + (-0.1074218750)(3.630021) + (0.3759765625)(4.147154) \\ &\quad + (0.7519531250)(4.706053) + (-0.0375976563)(5.309103) = 4.562284. \end{aligned}$$

The partial products may be cumulated in the machine, and only the final answer need be recorded. It may be verified that the same result is obtainable by computing the value from formula (1).

In some cases it will be found more convenient to compute the value of $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$ ab initio with the aid of the formulas indicated on page XVI.

⁵ Coefficients for 3-point to 11-point interpolation are given in the following volume: Mathematical Tables Project: *Tables of Lagrangian interpolation coefficients*, Columbia Univ. Press (1944).

Formula	Optimum range of x	Optimum range of n	Approximate accuracy (S indicates significant figures)
1-----	0 to 2	0 to 2	With 6 terms: 2S or more.
6-----	10 to 100	0 to 5	With 5 terms: 2S or more.
16-----	0 to 2	0 to 10	With 6 terms: 3S or more.
29-----	0 to 10	25 to 201	1S to 3S
34-----	0 to 100	5 to 201	2S to 4S
35-----	10 to 100	5 to 201	2S to 4S.
39-----	0 to 10	50 to 201	2S to 7S.
42-----	0 to 0.1	5 to 50	2S to 4S.
45-----	0 to 10	75 to 201	2S to 3S.
47-----	0 to 0.1	0 to 0.1	2S to 3S.
51-----	0 to 5	0 to 5	Order of magnitude (worst case) or better.

It is worth noting that (39) may also be used in the range $0 \leq x \leq 1$, $0 \leq n \leq 50$ to yield an accuracy of 1S to 5S. Formulas (6), (16), (29), (34), (35), (39) and (45) may be used outside the range of the present tables (i. e., for larger n and x), and they will yield results even more accurate than indicated above.

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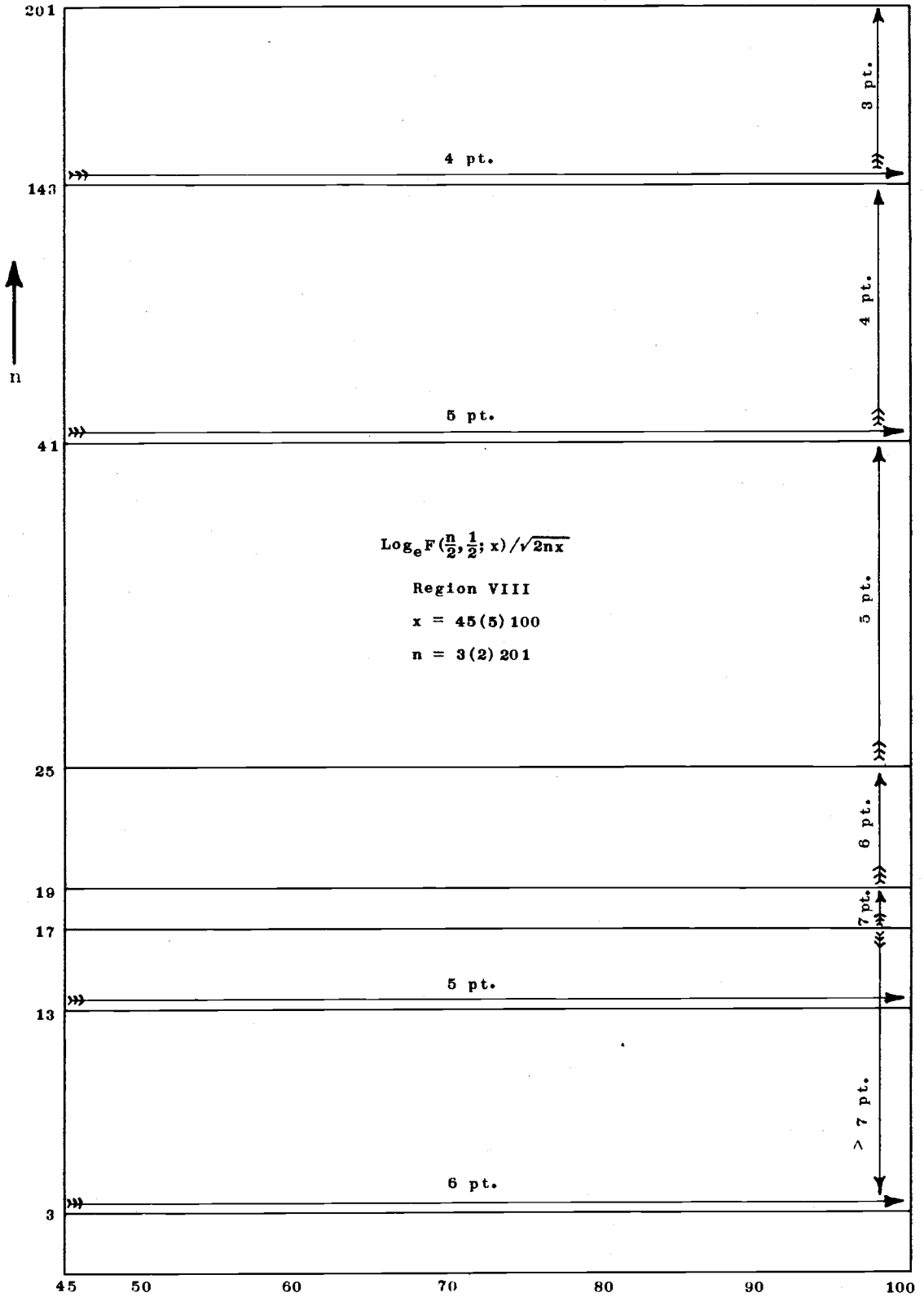
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*United States Dept. of Commerce,
National Bureau of Standards,
The Computation Laboratory
of the National Applied Mathematics Laboratories,
July 17, 1947.*

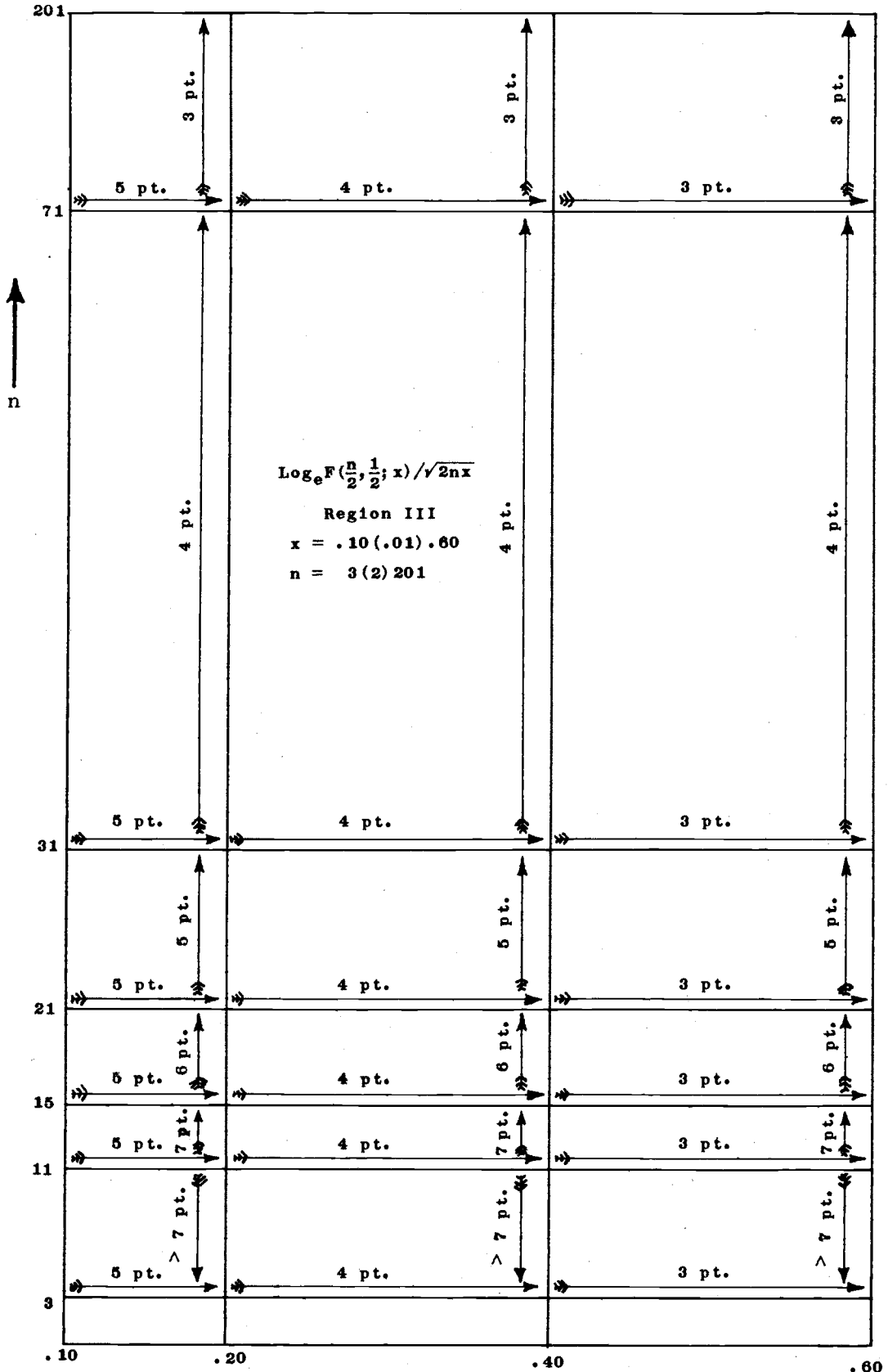
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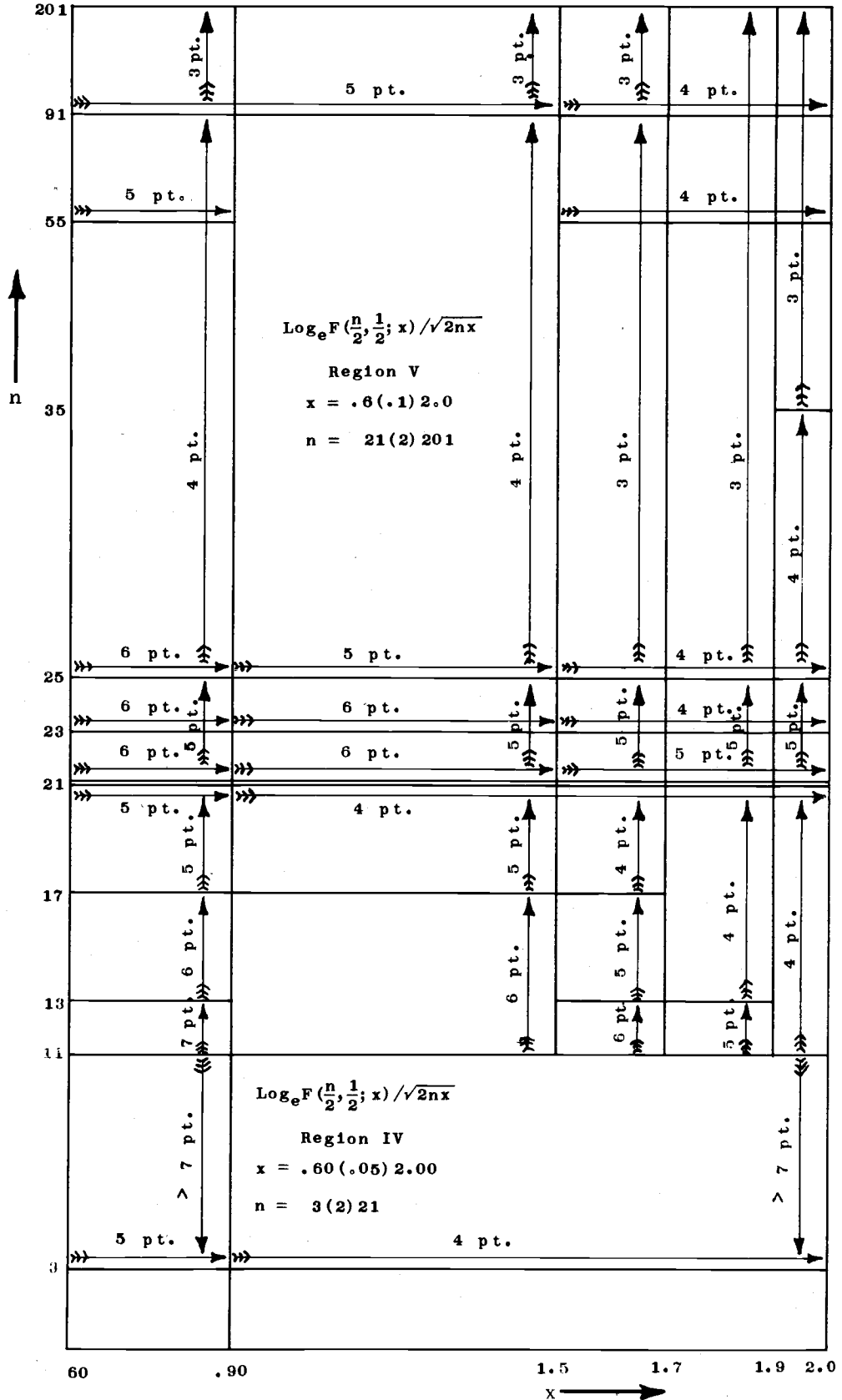
INTERPOLATION CHART



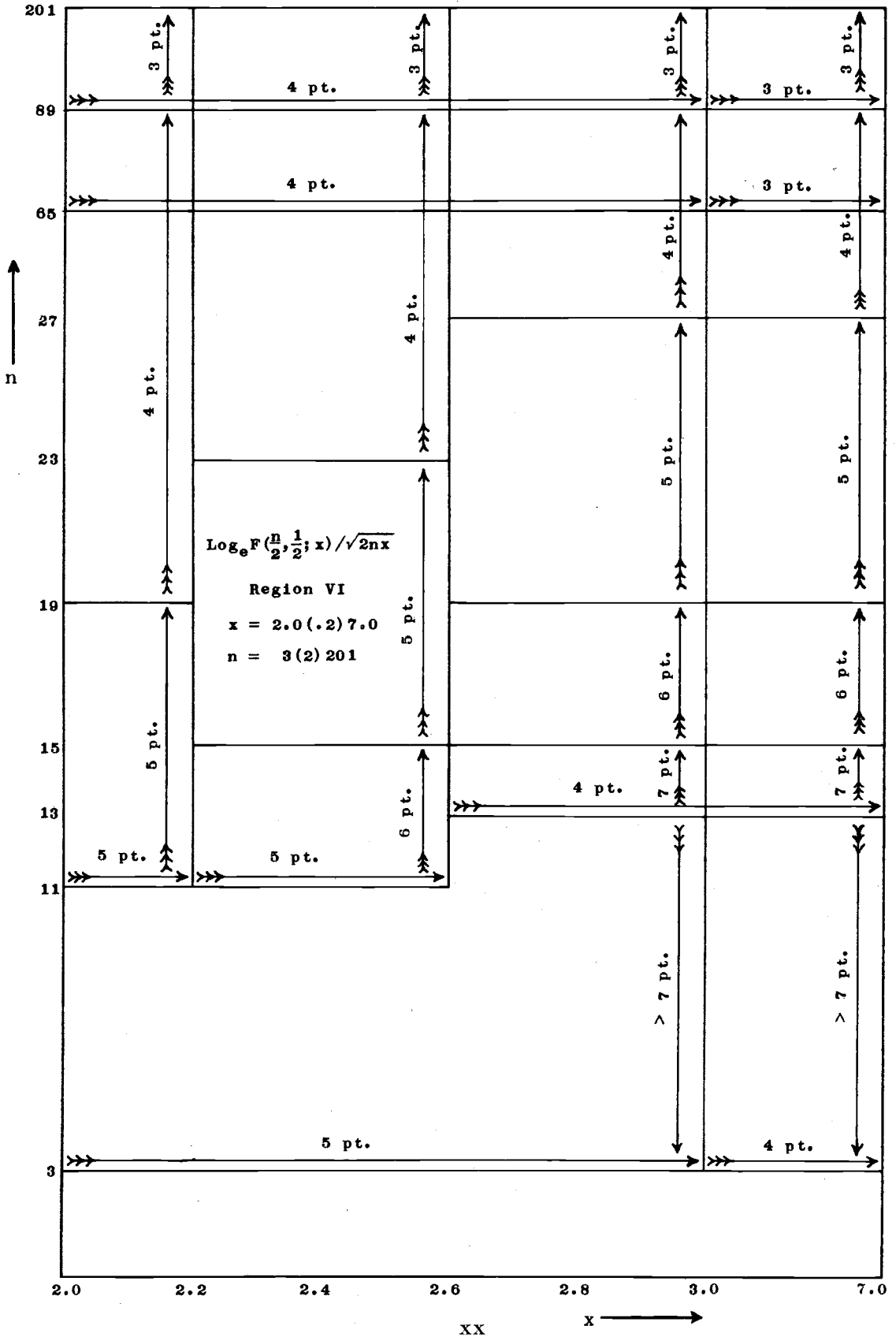
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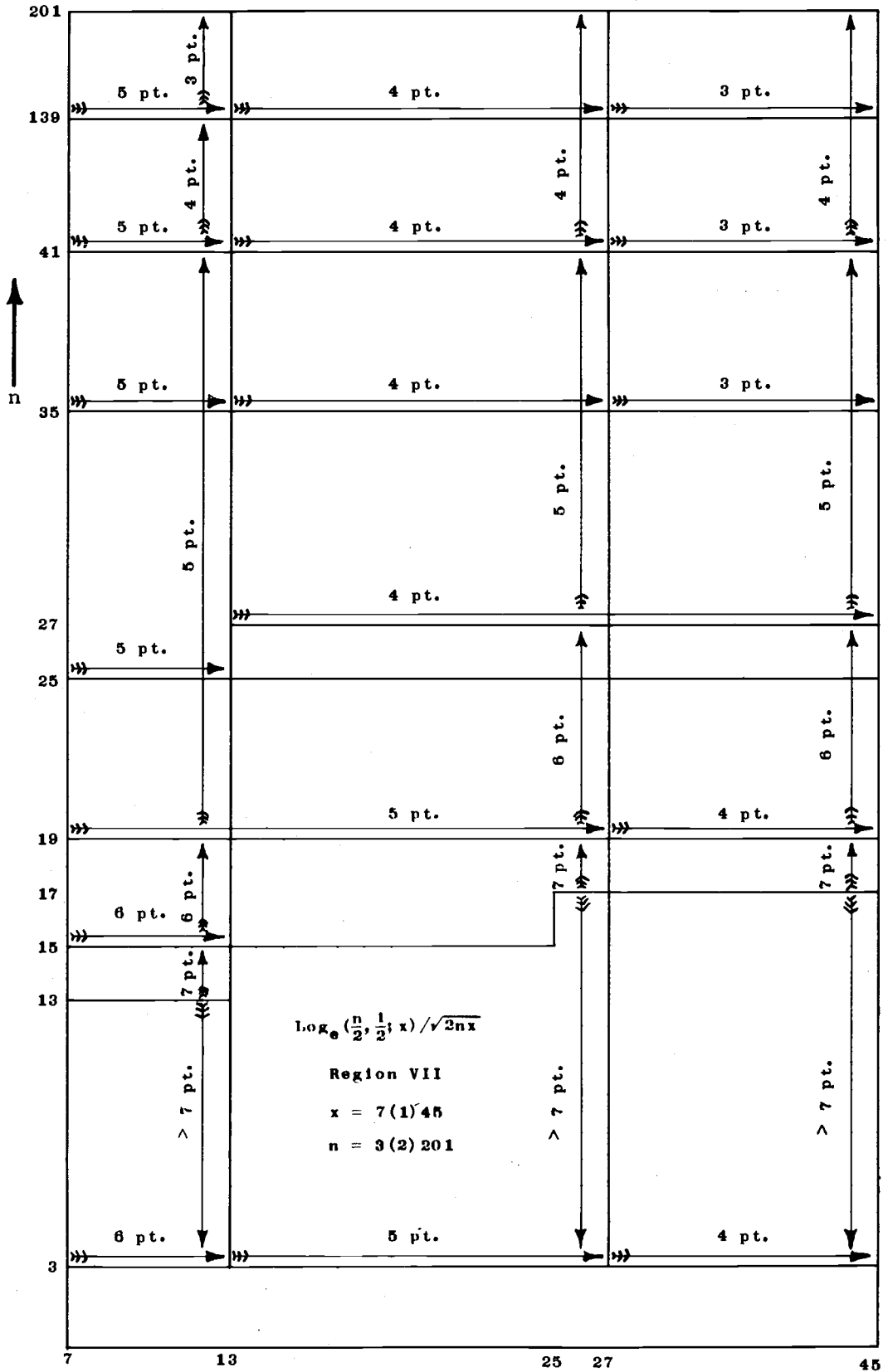
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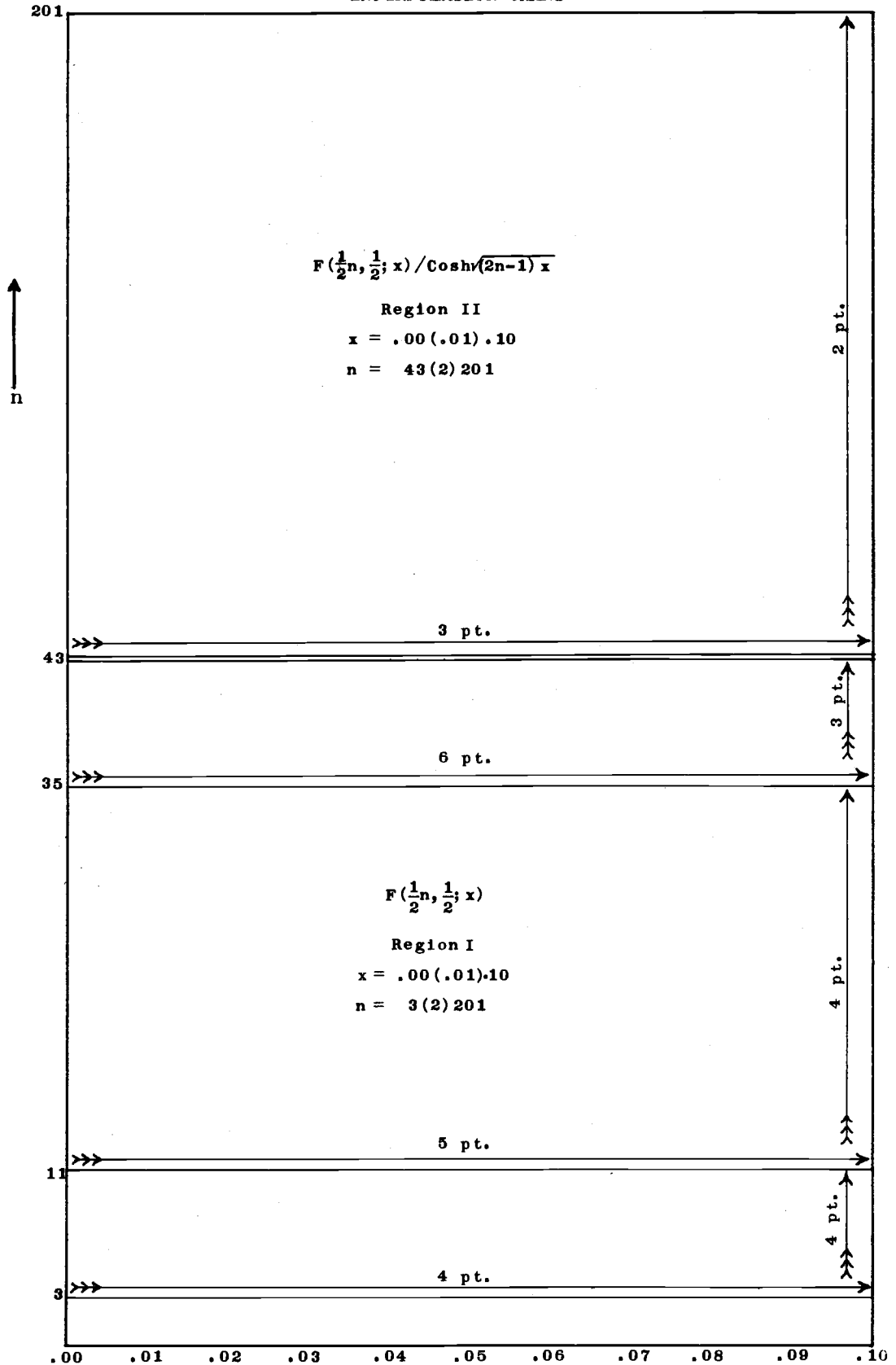


Table of $F\left(\frac{n}{2}, \frac{1}{2}; x\right)$

$$x = 0(.01)0.10$$

$$n = 3(2)201$$

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = \sqrt{\pi} \sum_{r=0}^{\infty} \frac{\Gamma\left(\frac{n}{2} + r\right) x^r}{\Gamma\left(\frac{n}{2}\right) \Gamma\left(\frac{1}{2} + r\right) r!}$$

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x)$

X	n = 3	n = 5	n = 7	n = 9	n = 11
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.030251	1.050587	1.071058	1.091664	1.112407
.02	1.061009	1.102362	1.144262	1.186716	1.229726
.03	1.092282	1.155346	1.219661	1.285242	1.352105
.04	1.124076	1.209561	1.297302	1.387335	1.479696
0.05	1.156398	1.265030	1.377235	1.493086	1.612655
.06	1.189257	1.321774	1.459510	1.602590	1.751140
.07	1.222659	1.379818	1.544179	1.715944	1.895316
.08	1.256613	1.439183	1.631293	1.833245	2.045349
.09	1.291126	1.499894	1.720905	1.954595	2.201411
.10	1.326205	1.561975	1.813070	2.080096	2.363677
	n = 13	n = 15	n = 17	n = 19	n = 21
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.133287	1.154304	1.175459	1.196753	1.218185
.02	1.273299	1.317437	1.362146	1.407430	1.453294
.03	1.420265	1.489737	1.560536	1.632678	1.706179
.04	1.574423	1.671551	1.771119	1.873165	1.977727
0.05	1.736014	1.863238	1.994402	2.129582	2.268856
.06	1.905289	2.065168	2.230909	2.402648	2.580523
.07	2.082504	2.277720	2.481180	2.693105	2.913720
.08	2.267922	2.501286	2.745773	3.001721	3.269476
.09	2.461812	2.736270	3.025265	3.329293	3.648860
.10	2.664454	2.983085	3.320249	3.676642	4.052979
	n = 23	n = 25	n = 27	n = 29	n = 31
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.239758	1.261470	1.283323	1.305317	1.327453
.02	1.499742	1.546779	1.594409	1.642637	1.691468
.03	1.781055	1.857322	1.934995	2.014092	2.094629
.04	2.084844	2.194555	2.306900	2.421920	2.539655
0.05	2.412302	2.559999	2.712029	2.868472	3.029412
.06	2.764674	2.955243	3.152374	3.356214	3.566913
.07	3.143255	3.381942	3.630021	3.887734	4.155329
.08	3.549391	3.841827	4.147154	4.465747	4.797994
.09	3.984485	4.336701	4.706053	5.093098	5.498410
.10	4.449994	4.868444	5.309103	5.772768	6.260257
	n = 33	n = 35	n = 37	n = 39	n = 41
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.349732	1.372153	1.394718	1.417426	1.440280
.02	1.740906	1.790957	1.841624	1.892912	1.944827
.03	2.176621	2.260087	2.345042	2.431503	2.519489
.04	2.660146	2.783434	2.909562	3.038572	3.170508
0.05	3.194932	3.365119	3.540057	3.719836	3.904542
.06	3.784623	4.009498	4.241694	4.481372	4.728693
.07	4.433058	4.721178	5.019950	5.329642	5.650525
.08	5.144286	5.505027	5.880627	6.271505	6.678090
.09	5.922573	6.366188	6.829868	7.314243	7.819956
.10	6.772410	7.310087	7.874174	8.465579	9.085232

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x)$

x	n = 43	n = 45	n = 47	n = 49	n = 51
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.463278	1.486423	1.509713	1.533151	1.556736
.02	1.997373	2.050556	2.104379	2.158848	2.213967
.03	2.609016	2.700101	2.792762	2.887017	2.982883
.04	3.305411	3.443327	3.584299	3.728374	3.875594
0.05	4.094267	4.289101	4.489137	4.694468	4.905189
.06	4.983822	5.246927	5.518176	5.797743	6.085803
.07	5.982876	6.326977	6.683116	7.051584	7.432680
.08	7.100819	7.540139	7.996505	8.470384	8.962250
.09	8.347666	8.898047	9.471790	10.06960	10.69220
.10	9.734091	10.41313	11.12337	11.86582	12.64156
	n = 53	n = 55	n = 57	n = 59	n = 61
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.580469	1.604351	1.628381	1.652562	1.676893
.02	2.269742	2.326178	2.383280	2.441052	2.499500
.03	3.080379	3.179523	3.280333	3.382827	3.487024
.04	4.026008	4.179661	4.336599	4.496871	4.660523
0.05	5.121397	5.343188	5.570661	5.803917	6.043057
.06	6.382534	6.688118	7.002737	7.326580	7.659836
.07	7.826707	8.233973	8.654794	9.089490	9.538386
.08	9.472589	10.00189	10.55067	11.11944	11.70872
.09	11.34033	12.01475	12.71622	13.44555	14.20353
.10	13.45166	14.29724	15.17943	16.09941	17.05836
	n = 63	n = 65	n = 67	n = 69	n = 71
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.701375	1.726008	1.750794	1.775732	1.800823
.02	2.558629	2.618444	2.678950	2.740152	2.802056
.03	3.592942	3.700602	3.810020	3.921218	4.034214
.04	4.827605	4.998165	5.172253	5.349918	5.531211
0.05	6.288182	6.539398	6.796810	7.060525	7.330650
.06	8.002696	8.355358	8.718020	9.090883	9.474152
.07	10.00181	10.48011	10.97363	11.48270	12.00770
.08	12.31905	12.95098	13.60507	14.28189	14.98201
.09	14.99100	15.80880	16.65780	17.53888	18.45294
.10	18.05753	19.09816	20.18155	21.30901	22.48189
	n = 73	n = 75	n = 77	n = 79	n = 81
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.826069	1.851469	1.877023	1.902734	1.928601
.02	2.864666	2.927989	2.992028	3.056791	3.122281
.03	4.149028	4.265679	4.384187	4.504573	4.626855
.04	5.716183	5.904886	6.097371	6.293691	6.493899
0.05	7.607295	7.890572	8.180592	8.477470	8.781321
.06	9.868036	10.27275	10.68850	11.11550	11.55399
.07	12.54898	13.10691	13.68187	14.27424	14.88441
.08	15.70604	16.45457	17.22822	18.02763	18.85343
.09	19.40091	20.38374	21.40237	22.45782	23.55107
.10	23.70158	24.96951	26.28711	27.65587	29.07733

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x)$

x	n = 83	n = 85	n = 87	n = 89	n = 91
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.954624	1.980805	2.007145	2.033642	2.060300
.02	3.188505	3.255467	3.323174	3.391630	3.460842
.03	4.751056	4.877194	5.005291	5.135368	5.267445
.04	6.698050	6.906196	7.118394	7.334699	7.555166
0.05	9.092262	9.410411	9.735889	10.06882	10.40932
.06	12.00418	12.46630	12.94059	13.42727	13.92659
.07	15.51276	16.15972	16.82568	17.51106	18.21628
.08	19.70627	20.58683	21.49578	22.43381	23.40164
.09	24.68316	25.85514	27.06808	28.32309	29.62128
.10	30.55303	32.08458	33.67360	35.32177	37.03079
	n = 93	n = 95	n = 97	n = 99	n = 101
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	2.087116	2.114094	2.141232	2.168533	2.195995
.02	3.530814	3.601552	3.673062	3.745350	3.818421
.03	5.401544	5.537686	5.675893	5.816185	5.958585
.04	7.779852	8.008815	8.242112	8.479801	8.721942
0.05	10.75751	11.11353	11.47750	11.84955	12.22981
.06	14.43878	14.96410	15.50280	16.05511	16.62131
.07	18.94178	19.68800	20.45537	21.24436	22.05541
.08	24.39997	25.42955	26.49112	27.58544	28.71329
.09	30.96379	32.35180	33.78649	35.26909	36.80084
.10	38.80242	40.63844	42.54070	44.51105	46.55142
	n = 103	n = 105	n = 107	n = 109	n = 111
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	2.223621	2.251410	2.279363	2.307481	2.335765
.02	3.892280	3.966934	4.042389	4.118649	4.195721
.03	6.103115	6.249797	6.398654	6.549707	6.702980
.04	8.968594	9.219817	9.475672	9.736220	10.00152
0.05	12.61842	13.01550	13.42120	13.83565	14.25899
.06	17.20165	17.79640	18.40582	19.03019	19.66978
.07	22.88901	23.74563	24.62575	25.52987	26.44588
.08	29.87547	31.07276	32.30600	33.57603	34.88369
.09	38.38301	40.01690	41.70383	43.44514	45.24223
.10	48.66378	50.85011	53.11249	55.45299	57.87377
	n = 113	n = 115	n = 117	n = 119	n = 121
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	2.364214	2.392831	2.421614	2.450566	2.479686
.02	4.273611	4.352324	4.431866	4.512244	4.593463
.03	6.858495	7.016275	7.176345	7.338726	7.503443
.04	10.27165	10.54665	10.82660	11.11156	11.40159
0.05	14.69136	15.13291	15.58378	16.04411	16.51406
.06	20.32487	20.99575	21.68271	22.38603	23.10601
.07	27.41210	28.39124	29.39642	30.42820	31.48710
.08	36.22985	37.61540	39.04123	40.50827	42.01744
.09	47.09649	49.00936	50.98231	53.01683	55.11445
.10	60.37702	62.96498	65.63993	68.40424	71.26027

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x)$

x	n=123	n=125	n=127	n=129	n=131
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	2.508975	2.538434	2.568064	2.597864	2.627837
.02	4.675530	4.758449	4.842228	4.926873	5.012389
.03	7.670519	7.839979	8.011846	8.186146	8.362901
.04	11.69677	11.99715	12.30281	12.61381	12.93023
0.05	16.99377	17.48339	17.98309	18.49301	19.01332
.06	23.84297	24.59719	25.36899	26.15868	26.96659
.07	32.57368	33.68850	34.83213	36.00516	37.20817
.08	43.56970	45.16602	46.80738	48.49478	50.22925
.09	57.27672	59.50523	61.80160	64.16748	66.60456
.10	74.21049	77.25739	80.40352	83.65151	87.00400
	n=133	n=135	n=137	n=139	n=141
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	2.657982	2.688300	2.718791	2.749457	2.780298
.02	5.098783	5.186060	5.274228	5.363292	5.453259
.03	8.542138	8.723880	8.908154	9.094984	9.284395
.04	13.25212	13.57957	13.91263	14.25139	14.59592
0.05	19.54416	20.08571	20.63813	21.20158	21.77623
.06	27.79303	28.63833	29.50283	30.38686	31.29076
.07	38.44176	39.70654	41.00313	42.33215	43.69425
.08	52.01184	53.84358	55.72558	57.65892	59.64472
.09	69.11455	71.69921	74.36032	77.09970	79.91922
.10	90.46374	94.03350	97.71612	101.5145	105.4317
	n=143	n=145	n=147	n=149	n=151
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	2.811315	2.842507	2.873877	2.905425	2.937150
.02	5.544134	5.635925	5.728638	5.822279	5.916854
.03	9.476414	9.671067	9.868379	10.06838	10.27109
.04	14.94628	15.30256	15.66482	16.03314	16.40759
0.05	22.36225	22.95980	23.56907	24.19023	24.82346
.06	32.21488	33.15958	34.12520	35.11211	36.12067
.07	45.09008	46.52029	47.98555	49.48654	51.02396
.08	61.68412	63.77827	65.92836	68.13558	70.40115
.09	82.82077	85.80628	88.87771	92.03709	95.28644
.10	109.4706	113.6343	117.9261	122.3491	126.9067
	n=153	n=155	n=157	n=159	n=161
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	2.969055	3.001139	3.033403	3.065849	3.098476
.02	6.012371	6.108835	6.206253	6.304632	6.403978
.03	10.47653	10.68475	10.89575	11.10958	11.32626
.04	16.78826	17.17522	17.56855	17.96833	18.37463
0.05	25.46893	26.12683	26.79734	27.48065	28.17694
.06	37.15126	38.20425	39.28003	40.37898	41.50149
.07	52.59850	54.21088	55.86182	57.55206	59.28235
.08	72.72632	75.11234	77.56050	80.07211	82.64851
.09	98.62786	102.0635	105.5954	109.2260	112.9574
.10	131.6022	136.4390	141.4207	146.5507	151.8329

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x)$

x	n = 163	n = 165	n = 167	n = 169	n = 171
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	3.131285	3.164277	3.197453	3.230812	3.264357
.02	6.504298	6.605599	6.707887	6.811170	6.915453
.03	11.54581	11.76826	11.99364	12.22198	12.45332
.04	18.78754	19.20714	19.63350	20.06672	20.50687
0.05	28.88641	29.60925	30.34565	31.09582	31.85994
.06	42.64796	43.81879	45.01440	46.23519	47.48159
.07	61.05344	62.86610	64.72111	66.61928	68.56140
.08	85.29103	88.00107	90.78001	93.62929	96.55035
.09	116.7918	120.7317	124.7795	128.9375	133.2082
.10	157.2709	162.8684	168.6295	174.5580	180.6580
	n = 173	n = 175	n = 177	n = 179	n = 181
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	3.298088	3.332005	3.366109	3.400400	3.434880
.02	7.020744	7.127050	7.234378	7.342734	7.452125
.03	12.68766	12.92506	13.16553	13.40910	13.65581
.04	20.95405	21.40832	21.86979	22.33854	22.81465
0.05	32.63823	33.43089	34.23812	35.06013	35.89714
.06	48.75403	50.05292	51.37871	52.73185	54.11278
.07	70.54829	72.58079	74.65975	76.78601	78.96044
.08	99.54467	102.6137	105.7591	108.9823	112.2849
.09	137.5942	142.0980	146.7222	151.4695	156.3426
.10	186.9337	193.3892	200.0288	206.8569	213.8780
	n = 183	n = 185	n = 187	n = 189	n = 191
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	3.469549	3.504407	3.539457	3.574697	3.610129
.02	7.562559	7.674043	7.786583	7.900187	8.014862
.03	13.90568	14.15874	14.41503	14.67457	14.93740
.04	23.29822	23.78932	24.28806	24.79453	25.30881
0.05	36.74935	37.61699	38.50028	39.39943	40.31466
.06	55.52195	56.95983	58.42689	59.92359	61.45042
.07	81.18394	83.45740	85.78172	88.15783	90.58668
.08	115.6685	119.1347	122.6853	126.3218	130.0460
.09	161.3442	166.4772	171.7445	177.1488	182.6934
.10	221.0966	228.5174	236.1452	243.9847	252.0409
	n = 193	n = 195	n = 197	n = 199	n = 201
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	3.645753	3.681571	3.717583	3.753789	3.790191
.02	8.130615	8.247453	8.365384	8.484415	8.604553
.03	15.20355	15.47304	15.74591	16.02219	16.30192
.04	25.83099	26.36118	26.89947	27.44594	28.00071
0.05	41.24622	42.19431	43.15919	44.14107	45.14020
.06	63.00787	64.59642	66.21658	67.86885	69.55374
.07	93.06921	95.60638	98.19919	100.8486	103.5557
.08	133.8597	137.7646	141.7625	145.8552	150.0447
.09	188.3810	194.2149	200.1981	206.3339	212.6255
.10	260.3189	268.8237	277.5606	286.5350	295.7523

Table of $F\left(\frac{n}{2}, \frac{1}{2}; x\right) / \text{Cosh}\sqrt{(2n-1)x}$

$$x = 0(.01)0.10$$

$$n = 43(2)201$$

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = \sqrt{\pi} \sum_{r=0}^{\infty} \frac{\Gamma\left(\frac{n}{2} + r\right) x^r}{\Gamma\left(\frac{n}{2}\right) \Gamma\left(\frac{1}{2} + r\right) r!}$$

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x) / \text{Cosh} \sqrt{(2n-1)x}$

x	n = 43	n = 45	n = 47	n = 49	n = 51
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005019	1.005019	1.005019	1.005019	1.005019
.02	1.010075	1.010074	1.010074	1.010074	1.010074
.03	1.015163	1.015162	1.015162	1.015161	1.015161
.04	1.020284	1.020282	1.020281	1.020280	1.020279
0.05	1.025436	1.025434	1.025432	1.025431	1.025429
.06	1.030619	1.030617	1.030615	1.030612	1.030610
.07	1.035834	1.035831	1.035828	1.035825	1.035822
.08	1.041080	1.041076	1.041072	1.041068	1.041065
.09	1.046357	1.046352	1.046347	1.046342	1.046338
.10	1.051665	1.051659	1.051653	1.051647	1.051642
	n = 53	n = 55	n = 57	n = 59	n = 61
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005019	1.005019	1.005019	1.005019	1.005019
.02	1.010073	1.010073	1.010073	1.010073	1.010073
.03	1.015160	1.015160	1.015159	1.015159	1.015158
.04	1.020278	1.020278	1.020277	1.020276	1.020275
0.05	1.025428	1.025427	1.025425	1.025424	1.025423
.06	1.030608	1.030606	1.030605	1.030603	1.030601
.07	1.035819	1.035817	1.035815	1.035812	1.035810
.08	1.041061	1.041058	1.041055	1.041052	1.041049
.09	1.046334	1.046330	1.046326	1.046322	1.046319
.10	1.051637	1.051632	1.051628	1.051623	1.051619
	n = 63	n = 65	n = 67	n = 69	n = 71
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005019	1.005019	1.005019	1.005019	1.005019
.02	1.010072	1.010072	1.010072	1.010072	1.010072
.03	1.015158	1.015157	1.015157	1.015156	1.015156
.04	1.020274	1.020274	1.020273	1.020272	1.020272
0.05	1.025422	1.025421	1.025419	1.025418	1.025417
.06	1.030600	1.030598	1.030597	1.030595	1.030594
.07	1.035808	1.035806	1.035804	1.035802	1.035800
.08	1.041047	1.041043	1.041041	1.041039	1.041037
.09	1.046316	1.046312	1.046309	1.046306	1.046304
.10	1.051615	1.051611	1.051607	1.051604	1.051600
	n = 73	n = 75	n = 77	n = 79	n = 81
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005019	1.005019	1.005019	1.005019	1.005019
.02	1.010071	1.010071	1.010071	1.010071	1.010071
.03	1.015156	1.015155	1.015155	1.015155	1.015154
.04	1.020271	1.020270	1.020270	1.020269	1.020269
0.05	1.025416	1.025416	1.025415	1.025414	1.025413
.06	1.030592	1.030591	1.030590	1.030589	1.030587
.07	1.035798	1.035797	1.035795	1.035793	1.035792
.08	1.041035	1.041032	1.041030	1.041028	1.041026
.09	1.046301	1.046298	1.046296	1.046293	1.046291
.10	1.051597	1.051594	1.051591	1.051588	1.051585

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x) / \text{Cosh} \sqrt{(2n-1)x}$

X	n = 83	n = 85	n = 87	n = 89	n = 91
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005019	1.005019	1.005019	1.005019	1.005018
.02	1.010071	1.010071	1.010070	1.010070	1.010070
.03	1.015154	1.015154	1.015153	1.015153	1.015153
.04	1.020268	1.020267	1.020267	1.020266	1.020266
0.05	1.025412	1.025411	1.025411	1.025410	1.025409
.06	1.030586	1.030585	1.030584	1.030583	1.030582
.07	1.035790	1.035789	1.035788	1.035786	1.035785
.08	1.041024	1.041023	1.041021	1.041019	1.041017
.09	1.046288	1.046286	1.046284	1.046282	1.046280
.10	1.051582	1.051579	1.051577	1.051574	1.051572
	n = 93	n = 95	n = 97	n = 99	n = 101
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005018	1.005018
.02	1.010070	1.010070	1.010070	1.010070	1.010070
.03	1.015153	1.015152	1.015152	1.015152	1.015151
.04	1.020265	1.020265	1.020265	1.020264	1.020264
0.05	1.025408	1.025408	1.025407	1.025406	1.025406
.06	1.030581	1.030580	1.030579	1.030578	1.030577
.07	1.035784	1.035782	1.035781	1.035780	1.035779
.08	1.041016	1.041014	1.041013	1.041011	1.041010
.09	1.046278	1.046276	1.046274	1.046272	1.046270
.10	1.051569	1.051567	1.051564	1.051562	1.051560
	n = 103	n = 105	n = 107	n = 109	n = 111
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005018	1.005018
.02	1.010069	1.010069	1.010069	1.010069	1.010069
.03	1.015151	1.015151	1.015151	1.015150	1.015150
.04	1.020263	1.020263	1.020262	1.020262	1.020262
0.05	1.025405	1.025404	1.025404	1.025403	1.025403
.06	1.030577	1.030576	1.030575	1.030574	1.030573
.07	1.035778	1.035777	1.035776	1.035774	1.035773
.08	1.041008	1.041007	1.041006	1.041004	1.041003
.09	1.046269	1.046267	1.046265	1.046264	1.046262
.10	1.051558	1.051556	1.051554	1.051552	1.051550
	n = 113	n = 115	n = 117	n = 119	n = 121
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005018	1.005018
.02	1.010069	1.010069	1.010069	1.010069	1.010068
.03	1.015150	1.015150	1.015150	1.015149	1.015149
.04	1.020261	1.020261	1.020261	1.020260	1.020260
0.05	1.025402	1.025402	1.025401	1.025401	1.025400
.06	1.030573	1.030572	1.030571	1.030570	1.030570
.07	1.035772	1.035771	1.035771	1.035770	1.035769
.08	1.041002	1.041000	1.040999	1.040998	1.040997
.09	1.046260	1.046259	1.046257	1.046256	1.046254
.10	1.051548	1.051546	1.051544	1.051543	1.051541

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x) / \text{Cosh}\sqrt{(2n-1)x}$

X	n = 123	n = 125	n = 127	n = 129	n = 131
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005018	1.005018
.02	1.010068	1.010068	1.010068	1.010068	1.010068
.03	1.015149	1.015149	1.015149	1.015148	1.015148
.04	1.020260	1.020259	1.020259	1.020259	1.020258
0.05	1.025400	1.025399	1.025399	1.025398	1.025398
.06	1.030569	1.030568	1.030568	1.030567	1.030566
.07	1.035768	1.035767	1.035766	1.035765	1.035764
.08	1.040996	1.040995	1.040994	1.040992	1.040991
.09	1.046253	1.046252	1.046250	1.046249	1.046248
.10	1.051539	1.051538	1.051536	1.051534	1.051533
	n = 133	n = 135	n = 137	n = 139	n = 141
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005018	1.005018
.02	1.010068	1.010068	1.010068	1.010068	1.010068
.03	1.015148	1.015148	1.015148	1.015148	1.015147
.04	1.020258	1.020258	1.020258	1.020257	1.020257
0.05	1.025397	1.025397	1.025396	1.025396	1.025396
.06	1.030566	1.030565	1.030565	1.030564	1.030563
.07	1.035764	1.035763	1.035762	1.035761	1.035760
.08	1.040990	1.040989	1.040988	1.040987	1.040986
.09	1.046246	1.046245	1.046244	1.046243	1.046242
.10	1.051531	1.051530	1.051528	1.051527	1.051525
	n = 143	n = 145	n = 147	n = 149	n = 151
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005018	1.005018
.02	1.010068	1.010067	1.010067	1.010067	1.010067
.03	1.015147	1.015147	1.015147	1.015147	1.015147
.04	1.020257	1.020256	1.020256	1.020256	1.020256
0.05	1.025395	1.025395	1.025394	1.025394	1.025394
.06	1.030563	1.030562	1.030562	1.030561	1.030561
.07	1.035760	1.035759	1.035758	1.035758	1.035757
.08	1.040986	1.040985	1.040984	1.040983	1.040982
.09	1.046241	1.046239	1.046238	1.046237	1.046236
.10	1.051524	1.051523	1.051521	1.051520	1.051519
	n = 153	n = 155	n = 157	n = 159	n = 161
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005018	1.005018
.02	1.010067	1.010067	1.010067	1.010067	1.010067
.03	1.015147	1.015146	1.015146	1.015146	1.015146
.04	1.020255	1.020255	1.020255	1.020255	1.020254
0.05	1.025393	1.025393	1.025392	1.025392	1.025392
.06	1.030560	1.030560	1.030559	1.030559	1.030558
.07	1.035756	1.035756	1.035755	1.035754	1.035754
.08	1.040981	1.040980	1.040979	1.040979	1.040978
.09	1.046235	1.046234	1.046233	1.046232	1.046231
.10	1.051517	1.051516	1.051515	1.051514	1.051513

TABLE OF $F(\frac{1}{2}n, \frac{1}{2}; x) / \text{Cosh} \sqrt{(2n-1)x}$

x	n = 163	n = 165	n = 167	n = 169	n = 171
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005018	1.005018
.02	1.010067	1.010067	1.010067	1.010067	1.010067
.03	1.015146	1.015146	1.015145	1.015145	1.015145
.04	1.020254	1.020254	1.020254	1.020253	1.020253
0.05	1.025391	1.025391	1.025391	1.025390	1.025390
.06	1.030558	1.030557	1.030557	1.030556	1.030556
.07	1.035753	1.035752	1.035752	1.035751	1.035751
.08	1.040977	1.040976	1.040975	1.040975	1.040974
.09	1.046230	1.046229	1.046228	1.046227	1.046226
.10	1.051511	1.051510	1.051509	1.051508	1.051507
	n = 173	n = 175	n = 177	n = 179	n = 181
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005018	1.005018	1.005018	1.005017	1.005017
.02	1.010066	1.010066	1.010066	1.010066	1.010066
.03	1.015145	1.015145	1.015145	1.015145	1.015145
.04	1.020253	1.020253	1.020253	1.020252	1.020252
0.05	1.025390	1.025389	1.025389	1.025389	1.025388
.06	1.030555	1.030555	1.030555	1.030554	1.030554
.07	1.035750	1.035749	1.035749	1.035748	1.035748
.08	1.040973	1.040973	1.040972	1.040971	1.040970
.09	1.046225	1.046225	1.046224	1.046223	1.046222
.10	1.051506	1.051505	1.051504	1.051503	1.051501
	n = 183	n = 185	n = 187	n = 189	n = 191
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005017	1.005017	1.005017	1.005017	1.005017
.02	1.010066	1.010066	1.010066	1.010066	1.010066
.03	1.015144	1.015144	1.015144	1.015144	1.015144
.04	1.020252	1.020252	1.020252	1.020251	1.020251
0.05	1.025388	1.025388	1.025388	1.025387	1.025387
.06	1.030553	1.030553	1.030553	1.030552	1.030552
.07	1.035747	1.035747	1.035746	1.035746	1.035745
.08	1.040970	1.040969	1.040968	1.040968	1.040967
.09	1.046221	1.046220	1.046219	1.046219	1.046218
.10	1.051500	1.051499	1.051499	1.051498	1.051497
	n = 193	n = 195	n = 197	n = 199	n = 201
0.00	1.000000	1.000000	1.000000	1.000000	1.000000
.01	1.005017	1.005017	1.005017	1.005017	1.005017
.02	1.010066	1.010066	1.010066	1.010066	1.010066
.03	1.015144	1.015144	1.015144	1.015143	1.015143
.04	1.020251	1.020251	1.020251	1.020250	1.020250
0.05	1.025387	1.025386	1.025386	1.025386	1.025386
.06	1.030551	1.030551	1.030551	1.030550	1.030550
.07	1.035745	1.035744	1.035744	1.035743	1.035743
.08	1.040967	1.040966	1.040965	1.040965	1.040964
.09	1.046217	1.046216	1.046216	1.046215	1.046214
.10	1.051496	1.051495	1.051494	1.051493	1.051492

Table of $[\log_e F(\frac{n}{2}, \frac{1}{2}; x)]/\sqrt{2nx}$

For x ranging between 0.10 and 100

$$n = 3(2)201$$

$$F\left(\frac{n}{2}, \frac{1}{2}; x\right) = \sqrt{\pi} \sum_{r=0}^{\infty} \frac{\Gamma\left(\frac{n}{2} + r\right) x^r}{\Gamma\left(\frac{n}{2}\right) \Gamma\left(\frac{1}{2} + r\right) r!}$$

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)]/\sqrt{2nx}$

x	n = 3	n = 5	n = 7	n = 9	n = 11
0.10	0.364476	0.445951	0.502885	0.545909	0.579959
.11	.380169	.463177	.520540	.563508	.597273
.12	.394932	.479195	.536808	.579609	.613021
.13	.408878	.494157	.551876	.594423	.627435
.14	.422099	.508191	.565896	.608122	.640698
0.15	0.434670	0.521398	0.578992	0.620846	0.652962
.16	.446656	.533868	.591268	.632709	.664351
.17	.458111	.545674	.602812	.643810	.674966
.18	.469082	.556878	.613700	.654230	.684896
.19	.479610	.567536	.623994	.664039	.694214
0.20	0.489730	0.577696	0.633751	0.673299	0.702983
.21	.499473	.587399	.643018	.682060	.711257
.22	.508866	.596682	.651839	.690369	.719083
.23	.517936	.605577	.660250	.698266	.726503
.24	.526702	.614113	.668284	.705785	.733551
0.25	0.535185	0.622317	0.675971	0.712957	0.740261
.26	.543403	.630211	.683337	.719810	.746660
.27	.551372	.637817	.690406	.726369	.752772
.28	.559107	.645153	.697197	.732655	.758620
.29	.566621	.652237	.703731	.738689	.764225
0.30	0.573927	0.659084	0.710025	0.744487	0.769602
.31	.581035	.665709	.716094	.750067	.774770
.32	.587956	.672125	.721953	.755442	.779741
.33	.594700	.678344	.727615	.760627	.784530
.34	.601276	.684377	.733091	.765632	.789148
0.35	0.607691	0.690233	0.738392	0.770470	0.793606
.36	.613954	.695924	.743530	.775150	.797914
.37	.620071	.701456	.748511	.779681	.802081
.38	.626049	.706839	.753346	.784072	.806116
.39	.631895	.712080	.758043	.788332	.810025
0.40	0.637614	0.717185	0.762607	0.792466	0.813817
.41	.643211	.722162	.767047	.796482	.817498
.42	.648691	.727016	.771368	.800386	.821073
.43	.654060	.731752	.775577	.804184	.824549
.44	.659322	.736378	.779678	.807881	.827930
0.45	0.664481	0.740896	0.783678	0.811482	0.831221
.46	.669541	.745312	.787580	.814992	.834426
.47	.674506	.749631	.791389	.818415	.837551
.48	.679379	.753856	.795109	.821756	.840598
.49	.684164	.757991	.798744	.825017	.843572
0.50	0.688864	0.762040	0.802299	0.828202	0.846475
.51	.693482	.766006	.805775	.831316	.849312
.52	.698020	.769893	.809178	.834360	.852084
.53	.702483	.773704	.812508	.837339	.854794
.54	.706871	.777441	.815770	.840254	.857446
0.55	0.711188	0.781107	0.818967	0.843108	0.860042
.56	.715436	.784706	.822100	.845904	.862583
.57	.719617	.788239	.825172	.848644	.865073
.58	.723734	.791708	.828186	.851330	.867513
.59	.727788	.795117	.831144	.853964	.869905
0.60	0.731781	0.798466	0.834047	0.856549	0.872251

TABLE OF $\left| \log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right| / \sqrt{2nx}$

x	n = 13	n = 15	n = 17	n = 19	n = 21
0.10	0.607770	0.631020	0.650813	0.667912	0.682863
.11	.624689	.647499	.666837	.683485	.697997
.12	.640007	.662358	.681239	.697441	.711529
.13	.653965	.675852	.694278	.710047	.723725
.14	.666761	.688182	.706162	.721510	.734796
0.15	0.678550	0.699509	0.717054	0.731997	0.744907
.16	.689461	.709967	.727088	.741641	.754193
.17	.699602	.719664	.736376	.750554	.762764
.18	.709063	.728690	.745006	.758825	.770710
.19	.717919	.737123	.753057	.766532	.778105
0.20	0.726233	0.745027	0.760593	0.773737	0.785013
.21	.734062	.752458	.767668	.780495	.791488
.22	.741454	.759462	.774330	.786853	.797575
.23	.748448	.766082	.780620	.792851	.803314
.24	.755082	.772353	.786572	.798523	.808738
0.25	0.761387	0.778306	0.792218	0.803900	0.813877
.26	.767392	.783969	.797585	.809008	.818756
.27	.773120	.789367	.802696	.813870	.823399
.28	.778594	.794520	.807574	.818506	.827825
.29	.783833	.799449	.812235	.822936	.832052
0.30	0.788856	0.804170	0.816697	0.827175	0.836096
.31	.793677	.808698	.820976	.831238	.839970
.32	.798311	.813048	.825084	.835137	.843688
.33	.802771	.817232	.829033	.838884	.847260
.34	.807068	.821261	.832834	.842491	.850697
0.35	0.811214	0.825146	0.836498	0.845966	0.854008
.36	.815217	.828895	.840034	.849318	.857201
.37	.819086	.832518	.843448	.852554	.860284
.38	.822830	.836022	.846750	.855684	.863264
.39	.826457	.839414	.849946	.858711	.866147
0.40	0.829972	0.842700	0.853041	0.861644	0.868939
.41	.833382	.845888	.856042	.864487	.871645
.42	.836693	.848982	.858955	.867245	.874270
.43	.839910	.851987	.861783	.869923	.876819
.44	.843038	.854908	.864532	.872525	.879295
0.45	0.846081	0.857750	0.867205	0.875056	0.881704
.46	.849045	.860516	.869807	.877519	.884047
.47	.851933	.863211	.872341	.879918	.886329
.48	.854748	.865837	.874811	.882255	.888552
.49	.857494	.868399	.877219	.884534	.890720
0.50	0.860174	0.870898	0.879569	0.886757	0.892834
.51	.862792	.873339	.881863	.888927	.894898
.52	.865350	.875723	.884104	.891047	.896914
.53	.867850	.878054	.886294	.893118	.898885
.54	.870296	.880333	.888435	.895144	.900811
0.55	0.872688	0.882563	0.890530	0.897125	0.902694
.56	.875031	.884745	.892581	.899064	.904538
.57	.877326	.886882	.894588	.900962	.906343
.58	.879574	.888976	.896555	.902822	.908111
.59	.881778	.891029	.898482	.904644	.909844
0.60	0.883939	0.893041	0.900372	0.906431	0.911542

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 23	n = 25	n = 27	n = 29	n = 31
0.10	0.696070	0.707838	0.718405	0.727957	0.736641
.11	.710784	.722153	.732340	.741533	.749879
.12	.723913	.734902	.744733	.753591	.761622
.13	.735725	.746355	.755851	.764396	.772135
.14	.746430	.756722	.765903	.774156	.781623
0.15	0.756195	0.766167	0.775053	0.783032	0.790246
.16	.765153	.774823	.783431	.791154	.798132
.17	.773412	.782796	.791143	.798627	.805383
.18	.781061	.790176	.798277	.805535	.812084
.19	.788175	.797035	.804903	.811949	.818302
0.20	0.794816	0.803434	0.811082	0.817927	0.824098
.21	.801036	.809424	.816865	.823520	.829517
.22	.806881	.815051	.822294	.828770	.834603
.23	.812388	.820350	.827405	.833711	.839389
.24	.817591	.825355	.832232	.838375	.843906
0.25	0.822519	0.830093	0.836800	0.842789	0.848179
.26	.827196	.834590	.841133	.846976	.852233
.27	.831645	.838865	.845254	.850956	.856085
.28	.835884	.842939	.849179	.854747	.859754
.29	.839932	.846828	.852925	.858365	.863256
0.30	0.843804	0.850547	0.856507	0.861823	0.866602
.31	.847513	.854108	.859937	.865135	.869806
.32	.851071	.857525	.863227	.868311	.872879
.33	.854489	.860806	.866387	.871361	.875830
.34	.857777	.863963	.869426	.874294	.878668
0.35	0.860944	0.867003	0.872352	0.877119	0.881400
.36	.863998	.869934	.875174	.879842	.884034
.37	.866946	.872763	.877897	.882470	.886576
.38	.869796	.875497	.880528	.885009	.889032
.39	.872552	.878142	.883074	.887466	.891408
0.40	0.875221	0.880703	0.885538	0.889843	0.893708
.41	.877808	.883185	.887926	.892148	.895936
.42	.880318	.885592	.890243	.894382	.898097
.43	.882754	.887929	.892491	.896552	.900195
.44	.885120	.890199	.894676	.898659	.902233
0.45	0.887422	0.892406	0.896799	0.900708	0.904214
.46	.889661	.894554	.898866	.902701	.906142
.47	.891841	.896645	.900877	.904642	.908018
.48	.893966	.898682	.902837	.906533	.909847
.49	.896037	.900668	.904748	.908376	.911629
0.50	0.898057	0.902605	0.906611	0.910173	0.913367
.51	.900029	.904496	.908430	.911928	.915063
.52	.901955	.906343	.910206	.913641	.916720
.53	.903837	.908147	.911942	.915315	.918338
.54	.905676	.909911	.913639	.916952	.919921
0.55	0.907476	0.911636	0.915298	0.918552	0.921468
.56	.909237	.913325	.916922	.920118	.922982
.57	.910961	.914978	.918512	.921652	.924465
.58	.912649	.916596	.920069	.923153	.925916
.59	.914304	.918182	.921594	.924624	.927339
0.60	0.915926	0.919737	0.923090	0.926067	0.928733

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)]/\sqrt{2nx}$

x	n = 33	n = 35	n = 37	n = 39	n = 41
0.10	0.744579	0.751868	0.758590	0.764814	0.770596
.11	.757497	.764484	.770921	.776875	.782402
.12	.768944	.775654	.781829	.787537	.792832
.13	.779184	.785638	.791573	.797056	.802138
.14	.788419	.794636	.800351	.805626	.810514
0.15	0.796806	0.802805	0.808316	0.813400	0.818109
.16	.804473	.810268	.815590	.820497	.825041
.17	.811520	.817126	.822271	.827014	.831405
.18	.818029	.823458	.828439	.833029	.837277
.19	.824069	.829332	.834159	.838606	.842721
0.20	0.829695	0.834802	0.839485	0.843799	0.847789
.21	.834956	.839916	.844464	.848652	.852525
.22	.839891	.844713	.849133	.853202	.856966
.23	.844535	.849226	.853525	.857483	.861142
.24	.848917	.853484	.857669	.861521	.865081
0.25	0.853062	0.857512	0.861588	0.865340	0.868807
.26	.856994	.861331	.865304	.868960	.872339
.27	.860730	.864961	.868835	.872400	.875694
.28	.864288	.868417	.872197	.875676	.878889
.29	.867682	.871714	.875405	.878800	.881937
0.30	0.870927	0.874865	0.878470	0.881786	0.884850
.31	.874034	.877882	.881405	.884645	.887638
.32	.877013	.880775	.884219	.887386	.890311
.33	.879873	.883553	.886921	.890018	.892877
.34	.882624	.886224	.889519	.892548	.895345
0.35	0.885272	0.888796	0.892020	0.894984	0.897721
.36	.887825	.891275	.894431	.897332	.900011
.37	.890289	.893667	.896757	.899598	.902221
.38	.892670	.895978	.899005	.901787	.904356
.39	.894972	.898214	.901179	.903904	.906420
0.40	0.897201	0.900378	0.903283	0.905953	0.908418
.41	.899360	.902474	.905322	.907939	.910355
.42	.901455	.904508	.907300	.909865	.912233
.43	.903488	.906482	.909219	.911734	.914055
.44	.905463	.908399	.911083	.913550	.915826
0.45	0.907382	0.910263	0.912896	0.915314	0.917547
.46	.909250	.912076	.914659	.917031	.919221
.47	.911069	.913841	.916375	.918703	.920851
.48	.912840	.915560	.918047	.920331	.922438
.49	.914567	.917237	.919677	.921918	.923986
0.50	0.916251	0.918872	0.921267	0.923466	0.925495
.51	.917894	.920467	.922818	.924977	.926968
.52	.919500	.922025	.924333	.926452	.928406
.53	.921068	.923548	.925813	.927893	.929812
.54	.922601	.925036	.927260	.929302	.931185
0.55	0.924100	0.926491	0.928675	0.930680	0.932529
.56	.925567	.927915	.930059	.932028	.933843
.57	.927003	.929309	.931414	.933348	.935130
.58	.928410	.930674	.932742	.934640	.936390
.59	.929788	.932012	.934042	.935906	.937624
0.60	0.931138	0.933323	0.935317	0.937147	0.938834

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=43	n=45	n=47	n=49	n=51
0.10	0.775985	0.781023	0.785745	0.790182	0.794362
.11	.787549	.792358	.796862	.801093	.805076
.12	.797760	.802361	.806669	.810713	.814519
.13	.806866	.811279	.815409	.819284	.822930
.14	.815060	.819300	.823267	.826989	.830489
0.15	0.822486	0.826569	0.830387	0.833968	0.837335
.16	.829263	.833200	.836881	.840333	.843578
.17	.835484	.839286	.842840	.846172	.849305
.18	.841223	.844899	.848336	.851558	.854586
.19	.846542	.850102	.853430	.856548	.859479
0.20	0.851494	0.854945	0.858170	0.861192	0.864032
.21	.856120	.859469	.862598	.865530	.868285
.22	.860458	.863711	.866749	.869596	.872271
.23	.864537	.867699	.870653	.873420	.876020
.24	.868385	.871461	.874335	.877026	.879554
0.25	0.872024	0.875019	0.877816	0.880436	0.882897
.26	.875473	.878391	.881116	.883668	.886065
.27	.878750	.881594	.884251	.886738	.889075
.28	.881870	.884644	.887235	.889662	.891940
.29	.884846	.887554	.890082	.892450	.894673
0.30	0.887690	0.890334	0.892802	0.895114	0.897284
.31	.890413	.892995	.895406	.897664	.899783
.32	.893023	.895547	.897903	.900109	.902180
.33	.895529	.897996	.900300	.902456	.904480
.34	.897939	.900352	.902604	.904712	.906692
0.35	0.900258	0.902619	0.904822	0.906885	0.908821
.36	.902494	.904804	.906960	.908979	.910873
.37	.904652	.906913	.909024	.910999	.912854
.38	.906736	.908950	.911017	.912951	.914767
.39	.908752	.910920	.912944	.914839	.916617
0.40	0.910703	0.912828	0.914810	0.916666	0.918407
.41	.912593	.914675	.916618	.918436	.920142
.42	.914427	.916467	.918371	.920153	.921825
.43	.916206	.918206	.920072	.921819	.923457
.44	.917934	.919896	.921725	.923437	.925043
0.45	0.919615	0.921538	0.923332	0.925010	0.926585
.46	.921249	.923135	.924894	.926540	.928085
.47	.922840	.924690	.926416	.928030	.929545
.48	.924390	.926205	.927898	.929481	.930967
.49	.925901	.927681	.929342	.930896	.932353
0.50	0.927374	0.929121	0.930751	0.932275	0.933705
.51	.928812	.930527	.932126	.933621	.935024
.52	.930217	.931899	.933468	.934936	.936312
.53	.931588	.933240	.934780	.936220	.937571
.54	.932929	.934550	.936062	.937475	.938801
0.55	0.934241	0.935832	0.937315	0.938703	0.940004
.56	.935524	.937086	.938542	.939904	.941181
.57	.936780	.938313	.939743	.941080	.942333
.58	.938010	.939515	.940918	.942231	.943461
.59	.939215	.940693	.942071	.943359	.944567
0.60	0.940396	0.941847	0.943200	0.944464	0.945650

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 53	n = 55	n = 57	n = 59	n = 61
0.10	0.798308	0.802040	0.805577	0.808935	0.812128
.11	.808834	.812388	.815754	.818948	.821985
.12	.818109	.821502	.824716	.827765	.830662
.13	.826368	.829617	.832693	.835610	.838383
.14	.833789	.836907	.839858	.842656	.845316
0.15	0.840509	0.843507	0.846344	0.849035	0.851590
.16	.846636	.849524	.852257	.854848	.857310
.17	.852256	.855042	.857680	.860179	.862554
.18	.857438	.860131	.862679	.865094	.867388
.19	.862239	.864845	.867310	.869647	.871866
0.20	0.866706	0.869231	0.871619	0.873883	0.876032
.21	.870879	.873328	.875644	.877839	.879923
.22	.874790	.877167	.879416	.881547	.883570
.23	.878467	.880777	.882962	.885033	.886998
.24	.881935	.884182	.886306	.888320	.890231
0.25	0.885214	0.887400	0.889468	0.891427	0.893287
.26	.888322	.890451	.892465	.894373	.896184
.27	.891274	.893349	.895312	.897171	.898936
.28	.894084	.896108	.898022	.899834	.901555
.29	.896765	.898740	.900606	.902375	.904054
0.30	0.899327	0.901254	0.903076	0.904802	0.906441
.31	.901778	.903661	.905440	.907126	.908726
.32	.904129	.905968	.907706	.909353	.910916
.33	.906385	.908183	.909882	.911491	.913018
.34	.908555	.910312	.911973	.913547	.915040
0.35	0.910643	0.912362	0.913987	0.915526	0.916986
.36	.912656	.914338	.915927	.917433	.918862
.37	.914599	.916244	.917800	.919273	.920672
.38	.916475	.918086	.919609	.921051	.922420
.39	.918289	.919867	.921358	.922770	.924110
0.40	0.920046	0.921591	0.923052	0.924434	0.925747
.41	.921747	.923261	.924692	.926047	.927332
.42	.923398	.924881	.926283	.927610	.928870
.43	.924999	.926453	.927827	.929127	.930362
.44	.926555	.927980	.929326	.930601	.931811
0.45	0.928067	0.929464	0.930784	0.932034	0.933220
.46	.929538	.930907	.932202	.933427	.934590
.47	.930970	.932313	.933582	.934784	.935924
.48	.932364	.933682	.934926	.936105	.937223
.49	.933724	.935016	.936237	.937393	.938489
0.50	0.935050	0.936317	0.937515	0.938649	0.939724
.51	.936344	.937587	.938762	.939875	.940930
.52	.937607	.938827	.939980	.941072	.942107
.53	.938841	.940039	.941170	.942241	.943256
.54	.940048	.941223	.942333	.943384	.944380
0.55	0.941228	0.942381	0.943470	0.944501	0.945479
.56	.942382	.943514	.944583	.945595	.946554
.57	.943512	.944623	.945672	.946665	.947607
.58	.944618	.945709	.946738	.947713	.948637
.59	.945702	.946773	.947783	.948740	.949647
0.60	0.946765	0.947816	0.948808	0.949746	0.950636

TABLE OF $\left| \log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right| / \sqrt{2nx}$

x	n = 63	n = 65	n = 67	n = 69	n = 71
0.10	0.815169	0.818070	0.820840	0.823490	0.826028
.11	.824877	.827634	.830267	.832785	.835196
.12	.833421	.836050	.838561	.840962	.843259
.13	.841021	.843537	.845938	.848233	.850430
.14	.847846	.850258	.852560	.854760	.856866
0.15	0.854022	0.856340	0.858552	0.860666	0.862689
.16	.859651	.861883	.864012	.866047	.867994
.17	.864812	.866964	.869018	.870981	.872858
.18	.869570	.871649	.873633	.875528	.877342
.19	.873977	.875988	.877907	.879740	.881494
0.20	0.878077	0.880025	0.881883	0.883658	0.885357
.21	.881906	.883794	.885596	.887317	.888964
.22	.885494	.887327	.889075	.890746	.892344
.23	.888868	.890648	.892347	.893969	.895522
.24	.892048	.893780	.895431	.897009	.898518
0.25	0.895056	0.896740	0.898347	0.899882	0.901351
.26	.897906	.899547	.901111	.902606	.904035
.27	.900614	.902212	.903737	.905193	.906586
.28	.903191	.904750	.906236	.907655	.909013
.29	.905650	.907170	.908619	.910004	.911328
0.30	0.907998	0.909482	0.910897	0.912248	0.913540
.31	.910246	.911695	.913076	.914396	.915657
.32	.912402	.913816	.915166	.916454	.917687
.33	.914471	.915853	.917172	.918431	.919635
.34	.916460	.917811	.919100	.920331	.921508
0.35	0.918374	0.919696	0.920957	0.922160	0.923312
.36	.920220	.921513	.922746	.923923	.925049
.37	.922000	.923266	.924472	.925624	.926726
.38	.923721	.924959	.926140	.927268	.928346
.39	.925384	.926596	.927753	.928857	.929912
0.40	0.926994	0.928181	0.929314	0.930395	0.931428
.41	.928554	.929717	.930826	.931885	.932897
.42	.930066	.931206	.932292	.933330	.934321
.43	.931534	.932651	.933716	.934732	.935704
.44	.932960	.934055	.935098	.936094	.937046
0.45	0.934346	0.935419	0.936442	0.937418	0.938351
.46	.935694	.936746	.937748	.938706	.939620
.47	.937007	.938038	.939021	.939959	.940856
.48	.938285	.939296	.940260	.941180	.942060
.49	.939531	.940523	.941468	.942370	.943233
0.50	0.940746	0.941719	0.942646	0.943531	0.944377
.51	.941932	.942886	.943796	.944664	.945493
.52	.943090	.944026	.944918	.945769	.946583
.53	.944221	.945139	.946014	.946850	.947648
.54	.945327	.946228	.947086	.947906	.948689
0.55	0.946408	0.947292	0.948134	0.948938	0.949707
.56	.947466	.948333	.949160	.949949	.950703
.57	.948501	.949352	.950163	.950938	.951678
.58	.949515	.950350	.951146	.951906	.952632
.59	.950508	.951328	.952109	.952855	.953567
0.60	0.951482	0.952286	0.953053	0.953785	0.954484

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)] / \sqrt{2nx}$

x	n=73	n=75	n=77	n=79	n=81
0.10	0.828460	0.830795	0.833038	0.835196	0.837273
.11	.837506	.839723	.841853	.843902	.845873
.12	.845461	.847574	.849604	.851556	.853434
.13	.852535	.854554	.856494	.858359	.860154
.14	.858883	.860819	.862678	.864465	.866184
0.15	0.864627	0.866486	0.868272	0.869988	0.871639
.16	.869860	.871649	.873368	.875020	.876609
.17	.874657	.876383	.878039	.879632	.881164
.18	.879079	.880745	.882345	.883883	.885362
.19	.883174	.884786	.886333	.887820	.889250
0.20	0.886984	0.888544	0.890042	0.891482	0.892867
.21	.890541	.892053	.893506	.894901	.896244
.22	.893874	.895342	.896751	.898106	.899408
.23	.897008	.898434	.899803	.901118	.902384
.24	.899963	.901349	.902680	.903958	.905188
0.25	0.902757	0.904105	0.905400	0.906644	0.907840
.26	.905404	.906717	.907977	.909188	.910353
.27	.907919	.909198	.910426	.911606	.912740
.28	.910313	.911560	.912756	.913906	.915013
.29	.912596	.913812	.914979	.916101	.917180
0.30	0.914778	0.915964	0.917103	0.918198	0.919250
.31	.916866	.918024	.919136	.920204	.921232
.32	.918867	.919998	.921084	.922128	.923132
.33	.920788	.921894	.922955	.923974	.924955
.34	.922636	.923716	.924753	.925750	.926708
0.35	0.924414	0.925470	0.926484	0.927459	0.928396
.36	.926128	.927161	.928153	.929106	.930022
.37	.927781	.928792	.929763	.930695	.931592
.38	.929378	.930368	.931318	.932230	.933108
.39	.930923	.931892	.932821	.933714	.934574
0.40	0.932418	0.933366	0.934277	0.935151	0.935992
.41	.933866	.934795	.935687	.936543	.937367
.42	.935271	.936181	.937054	.937893	.938700
.43	.936634	.937526	.938381	.939203	.939993
.44	.937958	.938832	.939670	.940475	.941250
0.45	0.939245	0.940101	0.940923	0.941712	0.942471
.46	.940496	.941336	.942141	.942915	.943659
.47	.941715	.942538	.943327	.944086	.944815
.48	.942902	.943708	.944483	.945226	.945941
.49	.944058	.944850	.945609	.946338	.947039
0.50	0.945186	0.945962	0.946707	0.947422	0.948109
.51	.946287	.947048	.947779	.948480	.949154
.52	.947362	.948109	.948825	.949513	.950174
.53	.948412	.949145	.949847	.950522	.951170
.54	.949439	.950157	.950846	.951508	.952144
0.55	0.950442	0.951147	0.951823	0.952473	0.953097
.56	.951424	.952116	.952779	.953416	.954028
.57	.952386	.953064	.953715	.954340	.954940
.58	.953327	.953992	.954631	.955244	.955834
.59	.954249	.954902	.955528	.956130	.956708
0.60	0.955153	0.955794	0.956408	0.956998	0.957566

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 83	n = 85	n = 87	n = 89	n = 91
0.10	0.839274	0.841205	0.843068	0.844867	0.846607
.11	.847773	.849605	.851372	.853080	.854731
.12	.855243	.856988	.858672	.860298	.861869
.13	.861883	.863550	.865159	.866712	.868214
.14	.867841	.869438	.870979	.872467	.873905
0.15	0.873230	0.874764	0.876244	0.877672	0.879053
.16	.878140	.879615	.881039	.882414	.883743
.17	.882640	.884062	.885435	.886760	.888041
.18	.886787	.888161	.889486	.890766	.892002
.19	.890628	.891956	.893238	.894475	.895670
0.20	0.894201	0.895487	0.896727	0.897925	0.899082
.21	.897537	.898783	.899986	.901146	.902268
.22	.900663	.901872	.903039	.904165	.905254
.23	.903602	.904776	.905909	.907003	.908060
.24	.906373	.907514	.908616	.909679	.910706
0.25	0.908992	0.910103	0.911174	0.912208	0.913207
.26	.911475	.912556	.913599	.914605	.915578
.27	.913833	.914886	.915902	.916882	.917830
.28	.916078	.917104	.918094	.919050	.919973
.29	.918218	.919219	.920185	.921117	.922017
0.30	0.920264	0.921240	0.922182	0.923092	0.923970
.31	.922221	.923175	.924094	.924982	.925840
.32	.924098	.925029	.925927	.926794	.927631
.33	.925899	.926809	.927686	.928533	.929351
.34	.927631	.928520	.929378	.930205	.931005
0.35	0.929298	0.930167	0.931006	0.931815	0.932597
.36	.930905	.931755	.932575	.933366	.934131
.37	.932455	.933287	.934089	.934863	.935611
.38	.933952	.934766	.935551	.936309	.937041
.39	.935400	.936197	.936965	.937707	.938423
0.40	0.936802	0.937582	0.938334	0.939060	0.939761
.41	.938160	.938924	.939660	.940371	.941058
.42	.939476	.940224	.940946	.941642	.942315
.43	.940754	.941487	.942194	.942876	.943535
.44	.941995	.942713	.943406	.944074	.944720
0.45	0.943201	0.943905	0.944584	0.945239	0.945871
.46	.944375	.945064	.945730	.946372	.946992
.47	.945517	.946193	.946845	.947474	.948082
.48	.946629	.947292	.947931	.948548	.949144
.49	.947714	.948364	.948990	.949595	.950179
0.50	0.948771	0.949408	0.950023	0.950616	0.951189
.51	.949803	.950428	.951031	.951612	.952174
.52	.950810	.951424	.952015	.952585	.953136
.53	.951795	.952396	.952976	.953535	.954075
.54	.952757	.953346	.953915	.954464	.954994
0.55	0.953697	0.954276	0.954834	0.955372	0.955892
.56	.954618	.955185	.955732	.956260	.956770
.57	.955519	.956075	.956612	.957130	.957630
.58	.956401	.956947	.957474	.957982	.958472
.59	.957265	.957801	.958318	.958816	.959297
0.60	0.958112	0.958638	0.959145	0.959634	0.960106

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 93	n = 95	n = 97	n = 99	n = 101
0.10	0.848290	0.849920	0.851498	0.853029	0.854513
.11	.856327	.857873	.859370	.860821	.862229
.12	.863390	.864861	.866287	.867669	.869009
.13	.869666	.871072	.872433	.873753	.875032
.14	.875296	.876643	.877947	.879211	.880436
0.15	0.880389	0.881682	0.882934	0.884147	0.885324
.16	.885028	.886271	.887476	.888643	.889775
.17	.889280	.890478	.891639	.892764	.893855
.18	.893198	.894355	.895476	.896562	.897615
.19	.896826	.897945	.899029	.900079	.901097
0.20	0.900201	0.901284	0.902333	0.903350	0.904335
.21	.903353	.904402	.905419	.906404	.907359
.22	.906306	.907324	.908310	.909266	.910193
.23	.909082	.910071	.911028	.911956	.912856
.24	.911699	.912660	.913591	.914493	.915368
0.25	0.914174	0.915108	0.916014	0.916891	0.917742
.26	.916518	.917428	.918310	.919164	.919992
.27	.918746	.919632	.920490	.921322	.922128
.28	.920866	.921730	.922566	.923377	.924163
.29	.922888	.923730	.924546	.925336	.926103
0.30	0.924820	0.925642	0.926437	0.927208	0.927956
.31	.926669	.927471	.928248	.929000	.929730
.32	.928441	.929224	.929983	.930718	.931430
.33	.930142	.930908	.931649	.932367	.933063
.34	.931778	.932526	.933250	.933952	.934632
0.35	0.933352	0.934084	0.934792	0.935478	0.936142
.36	.934870	.935585	.936277	.936948	.937598
.37	.936334	.937034	.937711	.938367	.939003
.38	.937748	.938433	.939095	.939737	.940360
.39	.939116	.939786	.940434	.941062	.941672
0.40	0.940439	0.941095	0.941730	0.942345	0.942941
.41	.941722	.942364	.942986	.943588	.944172
.42	.942965	.943594	.944203	.944793	.945364
.43	.944172	.944788	.945384	.945962	.946522
.44	.945344	.945947	.946532	.947098	.947646
0.45	0.946483	0.947074	0.947647	0.948202	0.948739
.46	.947591	.948170	.948732	.949275	.949802
.47	.948669	.949238	.949788	.950320	.950837
.48	.949720	.950277	.950816	.951338	.951845
.49	.950744	.951290	.951818	.952330	.952827
0.50	0.951742	0.952278	0.952796	0.953298	0.953785
.51	.952717	.953242	.953750	.954242	.954719
.52	.953668	.954183	.954681	.955164	.955632
.53	.954598	.955102	.955591	.956065	.956524
.54	.955506	.956001	.956480	.956945	.957395
0.55	0.956394	0.956880	0.957350	0.957806	0.958247
.56	.957263	.957740	.958201	.958648	.959080
.57	.958114	.958581	.959034	.959472	.959896
.58	.958947	.959405	.959849	.960279	.960695
.59	.959762	.960212	.960648	.961069	.961478
0.60	0.960562	0.961004	0.961431	0.961844	0.962245

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)]/\sqrt{2nx}$

x	n = 103	n = 105	n = 107	n = 109	n = 111
0.10	0.855953	0.857352	0.858712	0.860033	0.861319
.11	.863595	.864922	.866211	.867464	.868682
.12	.870309	.871572	.872799	.873991	.875151
.13	.876274	.877480	.878652	.879791	.880898
.14	.881626	.882780	.883902	.884993	.886054
0.15	0.886465	0.887574	0.888651	0.889698	0.890716
.16	.890874	.891940	.892976	.893983	.894962
.17	.894914	.895941	.896940	.897910	.898854
.18	.898637	.899629	.900593	.901530	.902440
.19	.902085	.903044	.903976	.904881	.905762
0.20	0.905292	0.906220	0.907122	0.907998	0.908850
.21	.908286	.909186	.910059	.910909	.911735
.22	.911092	.911964	.912812	.913636	.914437
.23	.913729	.914577	.915400	.916200	.916978
.24	.916216	.917040	.917840	.918617	.919373
0.25	0.918567	0.919368	0.920146	0.920902	0.921637
.26	.920795	.921574	.922332	.923068	.923783
.27	.922911	.923670	.924408	.925124	.925822
.28	.924925	.925665	.926384	.927082	.927762
.29	.926846	.927568	.928268	.928950	.929612
0.30	0.928681	0.929385	0.930069	0.930733	0.931380
.31	.930438	.931125	.931792	.932441	.933071
.32	.932122	.932792	.933444	.934077	.934693
.33	.933738	.934393	.935030	.935648	.936250
.34	.935292	.935932	.936554	.937159	.937746
0.35	0.936788	0.937414	0.938022	0.938612	0.939187
.36	.938229	.938841	.939436	.940014	.940575
.37	.939620	.940219	.940800	.941365	.941915
.38	.940963	.941549	.942118	.942671	.943209
.39	.942262	.942836	.943393	.943934	.944460
0.40	0.943520	0.944081	0.944626	0.945156	0.945671
.41	.944738	.945288	.945821	.946340	.946844
.42	.945919	.946457	.946980	.947488	.947982
.43	.947065	.947592	.948104	.948602	.949086
.44	.948178	.948695	.949197	.949684	.950158
0.45	0.949261	0.949767	0.950258	0.950736	0.951200
.46	.950313	.950809	.951291	.951759	.952213
.47	.951338	.951824	.952296	.952754	.953200
.48	.952336	.952812	.953275	.953724	.954161
.49	.953308	.953775	.954229	.954669	.955098
0.50	0.954256	0.954714	0.955159	0.955591	0.956011
.51	.955182	.955631	.956067	.956491	.956902
.52	.956086	.956526	.956954	.957369	.957773
.53	.956968	.957400	.957820	.958227	.958623
.54	.957831	.958255	.958666	.959065	.959454
0.55	0.958675	0.959090	0.959494	0.959885	0.960266
.56	.959500	.959908	.960303	.960687	.961061
.57	.960308	.960708	.961096	.961472	.961839
.58	.961099	.961491	.961872	.962241	.962601
.59	.961874	.962259	.962632	.962994	.963347
0.60	0.962634	0.963011	0.963377	0.963733	0.964078

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 113	n = 115	n = 117	n = 119	n = 121
0.10	0.862570	0.863787	0.864974	0.866130	0.867257
.11	.869868	.871023	.872147	.873243	.874311
.12	.876280	.877378	.878449	.879492	.880508
.13	.881976	.883025	.884047	.885043	.886013
.14	.887086	.888090	.889068	.890022	.890951
0.15	0.891706	0.892670	0.893610	0.894525	0.895417
.16	.895915	.896842	.897746	.898626	.899484
.17	.899772	.900666	.901536	.902385	.903211
.18	.903327	.904190	.905030	.905848	.906646
.19	.906618	.907452	.908264	.909056	.909827
0.20	0.909680	0.910487	0.911273	0.912039	0.912786
.21	.912538	.913320	.914082	.914824	.915548
.22	.915217	.915976	.916714	.917434	.918136
.23	.917735	.918471	.919189	.919888	.920569
.24	.920109	.920824	.921522	.922201	.922863
0.25	0.922353	0.923049	0.923727	0.924388	0.925032
.26	.924480	.925157	.925817	.926460	.927086
.27	.926500	.927160	.927802	.928428	.929038
.28	.928422	.929065	.929692	.930302	.930896
.29	.930256	.930883	.931494	.932088	.932668
0.30	0.932008	0.932620	0.933215	0.933796	0.934361
.31	.933685	.934282	.934863	.935429	.935981
.32	.935292	.935875	.936442	.936995	.937534
.33	.936835	.937404	.937959	.938499	.939025
.34	.938318	.938874	.939416	.939944	.940458
0.35	0.939746	0.940290	0.940819	0.941335	0.941838
.36	.941122	.941654	.942171	.942676	.943167
.37	.942449	.942969	.943476	.943969	.944450
.38	.943732	.944241	.944736	.945219	.945689
.39	.944972	.945470	.945954	.946427	.946887
0.40	0.946172	0.946659	0.947134	0.947596	0.948047
.41	.947334	.947812	.948276	.948729	.949170
.42	.948462	.948929	.949384	.949827	.950259
.43	.949556	.950014	.950459	.950893	.951316
.44	.950618	.951067	.951503	.951929	.952343
0.45	0.951651	0.952091	0.952518	0.952935	0.953341
.46	.952656	.953086	.953505	.953914	.954312
.47	.953634	.954056	.954466	.954866	.955256
.48	.954586	.955000	.955402	.955794	.956176
.49	.955514	.955920	.956314	.956699	.957073
0.50	0.956420	0.956817	0.957204	0.957581	0.957948
.51	.957303	.957692	.958072	.958441	.958801
.52	.958165	.958547	.958919	.959281	.959634
.53	.959008	.959382	.959747	.960102	.960448
.54	.959831	.960198	.960556	.960904	.961244
0.55	0.960636	0.960997	0.961347	0.961689	0.962022
.56	.961424	.961777	.962121	.962456	.962783
.57	.962195	.962542	.962879	.963208	.963528
.58	.962950	.963290	.963621	.963943	.964257
.59	.963690	.964023	.964348	.964664	.964972
0.60	0.964414	0.964741	0.965060	0.965370	0.965672

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 123	n = 125	n = 127	n = 129	n = 131
0.10	0.868356	0.869428	0.870475	0.871498	0.872496
.11	.875353	.876370	.877362	.878331	.879278
.12	.881500	.882467	.883411	.884333	.885234
.13	.886960	.887884	.888785	.889665	.890525
.14	.891858	.892742	.893605	.894448	.895271
0.15	0.896287	0.897135	0.897964	0.898772	0.899562
.16	.900321	.901137	.901934	.902712	.903471
.17	.904018	.904804	.905572	.906321	.907054
.18	.907424	.908184	.908925	.909648	.910354
.19	.910579	.911313	.912029	.912728	.913411
0.20	0.913514	0.914224	0.914917	0.915593	0.916254
.21	.916253	.916941	.917613	.918268	.918909
.22	.918820	.919488	.920139	.920775	.921396
.23	.921233	.921881	.922514	.923131	.923734
.24	.923508	.924138	.924753	.925353	.925939
0.25	0.925659	0.926272	0.926869	0.927453	0.928023
.26	.927698	.928294	.928875	.929443	.929998
.27	.929634	.930214	.930780	.931333	.931873
.28	.931476	.932042	.932594	.933132	.933659
.29	.933234	.933785	.934323	.934848	.935361
0.30	0.934912	0.935450	0.935975	0.936488	0.936988
.31	.936519	.937044	.937557	.938057	.938545
.32	.938060	.938572	.939072	.939560	.940037
.33	.939538	.940039	.940527	.941004	.941470
.34	.940960	.941449	.941926	.942392	.942847
0.35	0.942328	0.942806	0.943272	0.943728	0.944173
.36	.943646	.944114	.944570	.945015	.945450
.37	.944919	.945376	.945822	.946258	.946683
.38	.946148	.946595	.947031	.947457	.947873
.39	.947336	.947774	.948201	.948618	.949025
0.40	0.948486	0.948914	0.949332	0.949740	0.950139
.41	.949600	.950020	.950429	.950828	.951218
.42	.950680	.951091	.951492	.951883	.952265
.43	.951729	.952131	.952523	.952906	.953280
.44	.952747	.953141	.953525	.953901	.954267
0.45	0.953737	0.954123	0.954499	0.954867	0.955226
.46	.954699	.955078	.955446	.955807	.956158
.47	.955636	.956007	.956368	.956722	.957066
.48	.956549	.956912	.957267	.957612	.957950
.49	.957438	.957794	.958142	.958481	.958812
0.50	0.958306	0.958655	0.958995	0.959328	0.959652
.51	.959152	.959494	.959828	.960154	.960472
.52	.959978	.960314	.960641	.960961	.961273
.53	.960786	.961115	.961436	.961749	.962055
.54	.961575	.961897	.962212	.962519	.962819
0.55	0.962346	0.962662	0.962971	0.963272	0.963566
.56	.963101	.963411	.963714	.964009	.964298
.57	.963840	.964144	.964441	.964730	.965013
.58	.964563	.964862	.965153	.965437	.965714
.59	.965272	.965564	.965850	.966128	.966401
0.60	0.965966	0.966253	0.966533	0.966806	0.967073

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n=133	n=135	n=137	n=139	n=141
0.10	0.873472	0.874426	0.875359	0.876271	0.877164
.11	.880202	.881106	.881990	.882855	.883701
.12	.886114	.886974	.887815	.888638	.889443
.13	.891365	.892186	.892989	.893774	.894543
.14	.896075	.896861	.897630	.898382	.899117
0.15	0.900334	0.901089	0.901826	0.902548	0.903254
.16	.904214	.904939	.905649	.906342	.907021
.17	.907769	.908468	.909151	.909820	.910474
.18	.911045	.911720	.912379	.913024	.913656
.19	.914079	.914731	.915368	.915992	.916602
0.20	0.916900	0.917531	0.918148	0.918752	0.919342
.21	.919535	.920146	.920744	.921329	.921901
.22	.922003	.922596	.923176	.923743	.924298
.23	.924324	.924899	.925462	.926013	.926552
.24	.926511	.927071	.927618	.928153	.928676
0.25	0.928579	0.929124	0.929656	0.930176	0.930685
.26	.930539	.931069	.931586	.932093	.932588
.27	.932401	.932916	.933421	.933914	.934396
.28	.934173	.934675	.935166	.935647	.936117
.29	.935862	.936352	.936831	.937300	.937758
0.30	0.937477	0.937955	0.938422	0.938879	0.939325
.31	.939022	.939488	.939944	.940390	.940826
.32	.940503	.940958	.941403	.941838	.942264
.33	.941925	.942369	.942804	.943229	.943645
.34	.943292	.943726	.944150	.944566	.944972
0.35	0.944607	0.945032	0.945447	0.945852	0.946250
.36	.945875	.946290	.946696	.947092	.947481
.37	.947098	.947504	.947901	.948289	.948669
.38	.948280	.948677	.949065	.949445	.949816
.39	.949422	.949811	.950191	.950562	.950926
0.40	0.950528	0.950908	0.951280	0.951644	0.951999
.41	.951599	.951972	.952336	.952692	.953040
.42	.952638	.953002	.953359	.953707	.954048
.43	.953646	.954003	.954352	.954693	.955027
.44	.954625	.954975	.955316	.955651	.955978
0.45	0.955576	0.955919	0.956254	0.956581	0.956902
.46	.956502	.956838	.957166	.957487	.957800
.47	.957403	.957732	.958053	.958368	.958675
.48	.958280	.958603	.958918	.959226	.959527
.49	.959135	.959451	.959760	.960062	.960358
0.50	0.959969	0.960279	0.960582	0.960878	0.961167
.51	.960783	.961087	.961384	.961674	.961958
.52	.961578	.961875	.962166	.962451	.962729
.53	.962354	.962646	.962931	.963210	.963482
.54	.963112	.963398	.963678	.963952	.964219
0.55	0.963854	0.964134	0.964409	0.964677	0.964939
.56	.964579	.964855	.965124	.965387	.965644
.57	.965290	.965560	.965823	.966081	.966334
.58	.965985	.966250	.966508	.966761	.967009
.59	.966666	.966926	.967180	.967428	.967670
0.60	0.967334	0.967588	0.967837	0.968080	0.968318

TABLE OF $[\log F(\frac{1}{2}n, \frac{1}{2}; x)]/\sqrt{2nx}$

X	n = 143	n = 145	n = 147	n = 149	n = 151
0.10	0.878038	0.878893	0.879731	0.880552	0.881356
.11	.884529	.885340	.886134	.886912	.887674
.12	.890230	.891002	.891757	.892497	.893222
.13	.895295	.896031	.896752	.897458	.898150
.14	.899837	.900542	.901232	.901908	.902571
0.15	0.903945	0.904621	0.905284	0.905932	0.906568
.16	.907686	.908336	.908973	.909597	.910209
.17	.911114	.911741	.912355	.912956	.913545
.18	.914274	.914878	.915471	.916051	.916619
.19	.917199	.917784	.918356	.918917	.919466
0.20	0.919920	0.920486	0.921040	0.921582	0.922114
.21	.922461	.923009	.923545	.924071	.924586
.22	.924841	.925373	.925893	.926403	.926903
.23	.927079	.927595	.928100	.928595	.929080
.24	.929188	.929690	.930181	.930662	.931133
0.25	0.931183	0.931670	0.932148	0.932615	0.933074
.26	.933073	.933547	.934012	.934467	.934913
.27	.934868	.935330	.935782	.936225	.936660
.28	.936576	.937027	.937467	.937899	.938322
.29	.938206	.938645	.939074	.939495	.939908
0.30	0.939763	0.940191	0.940610	0.941020	0.941422
.31	.941253	.941670	.942079	.942480	.942872
.32	.942681	.943088	.943488	.943879	.944262
.33	.944052	.944450	.944840	.945222	.945596
.34	.945370	.945759	.946140	.946513	.946878
0.35	0.946638	0.947018	0.947391	0.947755	0.948113
.36	.947861	.948232	.948596	.948953	.949302
.37	.949040	.949404	.949760	.950108	.950450
.38	.950180	.950535	.950883	.951224	.951559
.39	.951281	.951629	.951970	.952304	.952630
0.40	0.952347	0.952688	0.953021	0.953348	0.953668
.41	.953380	.953714	.954040	.954360	.954673
.42	.954382	.954708	.955028	.955341	.955648
.43	.955354	.955673	.955986	.956293	.956593
.44	.956298	.956611	.956917	.957218	.957512
0.45	0.957215	0.957522	0.957822	0.958116	0.958404
.46	.958108	.958408	.958702	.958990	.959273
.47	.958976	.959270	.959559	.959841	.960118
.48	.959822	.960111	.960393	.960670	.960941
.49	.960647	.960929	.961206	.961478	.961743
0.50	0.961451	0.961728	0.961999	0.962265	0.962526
.51	.962235	.962507	.962773	.963034	.963289
.52	.963001	.963268	.963528	.963784	.964034
.53	.963750	.964011	.964266	.964517	.964762
.54	.964481	.964737	.964988	.965233	.965474
0.55	0.965196	0.965447	0.965693	0.965934	0.966170
.56	.965896	.966142	.966383	.966619	.966850
.57	.966580	.966822	.967058	.967290	.967516
.58	.967251	.967488	.967719	.967946	.968169
.59	.967908	.968140	.968367	.968590	.968808
0.60	0.968551	0.968779	0.969002	0.969220	0.969434

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 153	n = 155	n = 157	n = 159	n = 161
0.10	0.882145	0.882918	0.883676	0.884419	0.885149
.11	.888421	.889153	.889871	.890576	.891267
.12	.893933	.894629	.895313	.895983	.896640
.13	.898829	.899494	.900146	.900786	.901413
.14	.903220	.903857	.904481	.905093	.905694
0.15	0.907191	0.907802	0.908401	0.908989	0.909565
.16	.910808	.911395	.911971	.912536	.913091
.17	.914122	.914688	.915243	.915788	.916322
.18	.917176	.917723	.918258	.918784	.919299
.19	.920005	.920532	.921050	.921558	.922056
0.20	0.922635	0.923146	0.923647	0.924138	0.924620
.21	.925091	.925586	.926071	.926547	.927014
.22	.927392	.927872	.928343	.928804	.929257
.23	.929555	.930021	.930478	.930926	.931366
.24	.931595	.932048	.932491	.932927	.933354
0.25	0.933523	0.933963	0.934394	0.934818	0.935233
.26	.935350	.935778	.936198	.936610	.937014
.27	.937085	.937502	.937911	.938312	.938706
.28	.938737	.939143	.939541	.939932	.940316
.29	.940312	.940708	.941096	.941477	.941851
0.30	0.941817	0.942203	0.942582	0.942953	0.943318
.31	.943257	.943634	.944004	.944366	.944722
.32	.944637	.945006	.945366	.945720	.946067
.33	.945963	.946322	.946674	.947020	.947359
.34	.947236	.947588	.947932	.948270	.948601
0.35	0.948463	0.948806	0.949142	0.949472	0.949796
.36	.949644	.949980	.950309	.950632	.950948
.37	.950785	.951113	.951434	.951750	.952059
.38	.951886	.952207	.952522	.952830	.953133
.39	.952951	.953265	.953573	.953875	.954171
0.40	0.953982	0.954289	0.954590	0.954886	0.955175
.41	.954980	.955281	.955576	.955865	.956149
.42	.955948	.956242	.956531	.956814	.957092
.43	.956887	.957176	.957459	.957736	.958008
.44	.957800	.958082	.958359	.958631	.958897
0.45	0.958687	0.958963	0.959235	0.959501	0.959762
.46	.959549	.959820	.960086	.960347	.960602
.47	.960389	.960654	.960915	.961170	.961421
.48	.961206	.961467	.961722	.961972	.962218
.49	.962004	.962259	.962509	.962754	.962994
0.50	0.962781	0.963031	0.963276	0.963516	0.963752
.51	.963539	.963784	.964024	.964260	.964491
.52	.964279	.964520	.964755	.964986	.965213
.53	.965003	.965238	.965469	.965696	.965918
.54	.965709	.965940	.966167	.966389	.966607
0.55	0.966401	0.966627	0.966849	0.967067	0.967280
.56	.967077	.967299	.967516	.967730	.967939
.57	.967739	.967956	.968170	.968379	.968584
.58	.968387	.968600	.968810	.969015	.969216
.59	.969021	.969231	.969436	.969637	.969835
0.60	0.969644	0.969849	0.970050	0.970248	0.970441

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)] / \sqrt{2nx}$

x	n = 163	n = 165	n = 167	n = 169	n = 171
0.10	0.885865	0.886568	0.887258	0.887935	0.888601
.11	.891945	.892611	.893265	.893907	.894538
.12	.897286	.897919	.898541	.899152	.899752
.13	.902029	.902634	.903228	.903810	.904383
.14	.906284	.906862	.907431	.907988	.908536
0.15	0.910131	0.910686	0.911231	0.911767	0.912293
.16	.913635	.914169	.914693	.915208	.915713
.17	.916846	.917360	.917865	.918361	.918848
.18	.919805	.920301	.920788	.921267	.921737
.19	.922545	.923024	.923495	.923958	.924412
0.20	0.925093	0.925557	0.926013	0.926460	0.926900
.21	.927472	.927922	.928363	.928797	.929223
.22	.929702	.930138	.930566	.930986	.931399
.23	.931797	.932220	.932636	.933044	.933445
.24	.933773	.934184	.934588	.934985	.935374
0.25	0.935641	0.936041	0.936433	0.936819	0.937198
.26	.937411	.937800	.938182	.938557	.938925
.27	.939092	.939471	.939843	.940208	.940567
.28	.940692	.941061	.941423	.941779	.942129
.29	.942218	.942578	.942931	.943278	.943618
0.30	0.943676	0.944026	0.944371	0.944709	0.945042
.31	.945071	.945413	.945749	.946080	.946404
.32	.946408	.946742	.947071	.947393	.947709
.33	.947692	.948018	.948339	.948654	.948963
.34	.948926	.949245	.949558	.949865	.950167
0.35	0.950114	0.950426	0.950732	0.951032	0.951327
.36	.951258	.951563	.951862	.952156	.952445
.37	.952363	.952661	.952954	.953241	.953523
.38	.953430	.953721	.954008	.954288	.954564
.39	.954461	.954747	.955027	.955302	.955571
0.40	0.955460	0.955739	0.956013	0.956282	0.956546
.41	.956427	.956700	.956968	.957232	.957490
.42	.957365	.957632	.957895	.958152	.958406
.43	.958275	.958537	.958794	.959046	.959294
.44	.959159	.959415	.959667	.959914	.960157
0.45	0.960018	0.960269	0.960516	0.960758	0.960996
.46	.960853	.961099	.961341	.961578	.961811
.47	.961666	.961908	.962144	.962377	.962605
.48	.962459	.962695	.962927	.963155	.963378
.49	.963230	.963462	.963690	.963913	.964132
0.50	0.963983	0.964210	0.964433	0.964652	0.964867
.51	.964718	.964940	.965159	.965373	.965584
.52	.965435	.965653	.965867	.966078	.966284
.53	.966136	.966350	.966559	.966765	.966968
.54	.966820	.967030	.967236	.967438	.967636
0.55	0.967490	0.967695	0.967897	0.968095	0.968290
.56	.968145	.968346	.968544	.968738	.968929
.57	.968786	.968983	.969177	.969368	.969555
.58	.969414	.969607	.969798	.969984	.970168
.59	.970028	.970218	.970405	.970588	.970768
0.60	0.970631	0.970817	0.971000	0.971180	0.971356

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 173	n = 175	n = 177	n = 179	n = 181
0.10	0.889255	0.889898	0.890529	0.891150	0.891761
.11	.895157	.895766	.896364	.896953	.897531
.12	.900341	.900920	.901489	.902049	.902599
.13	.904945	.905498	.906041	.906575	.907100
.14	.909075	.909604	.910124	.910635	.911138
0.15	0.912809	0.913317	0.913816	0.914306	0.914788
.16	.916210	.916698	.917178	.917650	.918113
.17	.919327	.919797	.920259	.920714	.921160
.18	.922199	.922653	.923099	.923537	.923968
.19	.924858	.925297	.925728	.926152	.926568
0.20	0.927332	0.927756	0.928173	0.928583	0.928986
.21	.929641	.930052	.930456	.930853	.931244
.22	.931805	.932204	.932595	.932980	.933359
.23	.933839	.934226	.934606	.934980	.935348
.24	.935757	.936133	.936502	.936865	.937222
0.25	0.937570	0.937935	0.938294	0.938647	0.938994
.26	.939287	.939643	.939993	.940336	.940674
.27	.940919	.941265	.941606	.941940	.942269
.28	.942472	.942809	.943141	.943467	.943787
.29	.943953	.944282	.944605	.944923	.945235
0.30	0.945368	0.945689	0.946004	0.946314	0.946618
.31	.946722	.947035	.947343	.947645	.947942
.32	.948020	.948326	.948626	.948921	.949211
.33	.949266	.949565	.949858	.950146	.950429
.34	.950464	.950755	.951042	.951323	.951600
0.35	0.951617	0.951902	0.952182	0.952457	0.952727
.36	.952728	.953006	.953280	.953549	.953813
.37	.953800	.954072	.954340	.954603	.954861
.38	.954835	.955102	.955363	.955620	.955873
.39	.955836	.956097	.956353	.956605	.956852
0.40	0.956806	0.957060	0.957311	0.957557	0.957799
.41	.957744	.957994	.958239	.958480	.958717
.42	.958654	.958899	.959139	.959375	.959606
.43	.959538	.959777	.960012	.960243	.960470
.44	.960395	.960630	.960860	.961086	.961308
0.45	0.961229	0.961458	0.961684	0.961906	0.962123
.46	.962040	.962265	.962486	.962703	.962916
.47	.962829	.963049	.963266	.963478	.963688
.48	.963598	.963814	.964026	.964234	.964439
.49	.964347	.964559	.964766	.964971	.965171
0.50	0.965078	0.965285	0.965489	0.965689	0.965886
.51	.965791	.965994	.966193	.966390	.966582
.52	.966487	.966686	.966882	.967074	.967263
.53	.967166	.967362	.967554	.967742	.967927
.54	.967831	.968022	.968210	.968395	.968577
0.55	0.968481	0.968668	0.968853	0.969034	0.969212
.56	.969116	.969300	.969481	.969659	.969833
.57	.969738	.969919	.970096	.970270	.970442
.58	.970348	.970524	.970698	.970869	.971037
.59	.970944	.971118	.971288	.971456	.971620
0.60	0.971529	0.971699	0.971866	0.972030	0.972192

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 183	n = 185	n = 187	n = 189	n = 191
0.10	0.892361	0.892952	0.893533	0.894104	0.894667
.11	.898100	.898659	.899210	.899751	.900284
.12	.903140	.903672	.904196	.904711	.905218
.13	.907617	.908125	.908624	.909116	.909600
.14	.911632	.912118	.912596	.913067	.913530
0.15	0.915263	0.915729	0.916188	0.916639	0.917084
.16	.918569	.919018	.919459	.919893	.920320
.17	.921600	.922032	.922456	.922875	.923286
.18	.924392	.924809	.925219	.925622	.926019
.19	.926978	.927380	.927777	.928167	.928550
0.20	0.929382	0.929772	0.930156	0.930533	0.930904
.21	.931628	.932005	.932377	.932742	.933102
.22	.933731	.934098	.934458	.934812	.935161
.23	.935709	.936064	.936414	.936758	.937096
.24	.937573	.937919	.938258	.938593	.938922
0.25	0.939336	0.939672	0.940002	0.940327	0.940646
.26	.941006	.941333	.941654	.941970	.942281
.27	.942592	.942910	.943223	.943531	.943834
.28	.944102	.944412	.944717	.945017	.945312
.29	.945542	.945844	.946141	.946434	.946721
0.30	0.946918	0.947212	0.947502	0.947787	0.948068
.31	.948234	.948522	.948804	.949082	.949356
.32	.949496	.949777	.950053	.950324	.950591
.33	.950708	.950982	.951251	.951516	.951777
.34	.951872	.952140	.952403	.952662	.952917
0.35	0.952993	0.953254	0.953512	0.953765	0.954014
.36	.954073	.954329	.954580	.954828	.955071
.37	.955115	.955365	.955611	.955853	.956091
.38	.956122	.956366	.956607	.956843	.957076
.39	.957095	.957334	.957570	.957801	.958029
0.40	0.958037	0.958271	0.958502	0.958728	0.958951
.41	.958950	.959179	.959404	.959626	.959844
.42	.959835	.960059	.960279	.960496	.960710
.43	.960693	.960913	.961129	.961341	.961550
.44	.961527	.961742	.961954	.962162	.962366
0.45	0.962338	0.962548	0.962755	0.962959	0.963160
.46	.963126	.963332	.963535	.963735	.963931
.47	.963893	.964095	.964294	.964490	.964682
.48	.964640	.964839	.965033	.965225	.965414
.49	.965369	.965563	.965754	.965942	.966126
0.50	0.966079	0.966269	0.966456	0.966640	0.966822
.51	.966772	.966959	.967142	.967322	.967500
.52	.967449	.967632	.967811	.967988	.968162
.53	.968110	.968289	.968465	.968638	.968809
.54	.968756	.968931	.969104	.969274	.969441
0.55	0.969387	0.969559	0.969729	0.969895	0.970059
.56	.970005	.970174	.970340	.970503	.970664
.57	.970610	.970775	.970938	.971096	.971256
.58	.971202	.971364	.971524	.971681	.971835
.59	.971782	.971941	.972098	.972252	.972403
0.60	0.972350	0.972507	0.972660	0.972811	0.972960

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n= 193	n= 195	n= 197	n= 199	n= 201
0.10	0.895221	0.895766	0.896303	0.896831	0.897352
.11	.900809	.901325	.901834	.902335	.902828
.12	.905717	.906208	.906692	.907168	.907637
.13	.910076	.910545	.911006	.911461	.911908
.14	.913986	.914434	.914876	.915311	.915739
0.15	0.917521	0.917951	0.918375	0.918792	0.919204
.16	.920741	.921154	.921562	.921963	.922358
.17	.923691	.924090	.924482	.924869	.925250
.18	.926410	.926795	.927174	.927547	.927914
.19	.928928	.929300	.929666	.930026	.930381
0.20	0.931269	0.931629	0.931983	0.932332	0.932675
.21	.933456	.933804	.934147	.934485	.934818
.22	.935504	.935842	.936175	.936502	.936825
.23	.937430	.937758	.938080	.938398	.938712
.24	.939245	.939564	.939877	.940186	.940490
0.25	0.940961	0.941271	0.941576	0.941876	0.942172
.26	.942587	.942889	.943186	.943478	.943766
.27	.944132	.944426	.944714	.944999	.945279
.28	.945602	.945888	.946169	.946447	.946720
.29	.947004	.947283	.947557	.947827	.948093
0.30	0.948344	0.948615	0.948883	0.949146	0.949406
.31	.949626	.949891	.950152	.950409	.950662
.32	.950854	.951113	.951368	.951619	.951866
.33	.952034	.952286	.952535	.952780	.953021
.34	.953167	.953414	.953657	.953897	.954132
0.35	0.954259	0.954500	0.954737	0.954971	0.955202
.36	.955310	.955546	.955778	.956007	.956232
.37	.956325	.956556	.956783	.957006	.957226
.38	.957305	.957531	.957753	.957971	.958187
.39	.958253	.958474	.958691	.958904	.959115
0.40	0.959170	0.959386	0.959598	0.959808	0.960014
.41	.960059	.960270	.960478	.960683	.960884
.42	.960920	.961127	.961330	.961531	.961728
.43	.961756	.961959	.962158	.962354	.962548
.44	.962568	.962766	.962962	.963154	.963343
0.45	0.963357	0.963551	0.963742	0.963931	0.964116
.46	.964125	.964315	.964502	.964687	.964868
.47	.964872	.965058	.965242	.965422	.965600
.48	.965599	.965782	.965962	.966139	.966313
.49	.966308	.966487	.966664	.966837	.967008
0.50	0.967000	0.967175	0.967348	0.967518	0.967685
.51	.967675	.967846	.968016	.968182	.968346
.52	.968333	.968502	.968668	.968831	.968992
.53	.968977	.969142	.969305	.969465	.969622
.54	.969606	.969768	.969927	.970084	.970238
0.55	0.970221	0.970379	0.970536	0.970690	0.970841
.56	.970822	.970978	.971131	.971282	.971430
.57	.971411	.971564	.971714	.971862	.972007
.58	.971987	.972137	.972284	.972429	.972572
.59	.972552	.972699	.972843	.972985	.973125
0.60	0.973106	0.973249	0.973391	0.973530	0.973668

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 3	n = 5	n = 7	n = 9	n = 11
0.60	0.731781	0.798466	0.834047	0.856549	0.872251
.65	.750900	.814398	.847815	.868787	.883352
.70	.768750	.829123	.860483	.880022	.893530
.75	.785497	.842815	.872219	.890411	.902931
.80	.801278	.855616	.883154	.900075	.911670
0.85	0.816206	0.867641	0.893398	0.909116	0.919838
.90	.830376	.878984	.903036	.917613	.927509
.95	.843869	.889724	.912143	.925633	.934747
1.00	.856755	.899929	.920779	.933231	.941600
1.05	.869091	.909655	.928996	.940454	.948112
1.10	0.880930	0.918950	0.936836	0.947342	0.954318
1.15	.892316	.927856	.944338	.953927	.960250
1.20	.903288	.936409	.951533	.960240	.965935
1.25	.913880	.944639	.958450	.966305	.971394
1.30	.924123	.952576	.965112	.972143	.976648
1.35	0.934043	0.960242	0.971541	0.977775	0.981714
1.40	.943665	.967660	.977756	.983216	.986608
1.45	.953010	.974848	.983773	.988483	.991343
1.50	.962098	.981823	.989608	.993587	.995931
1.55	.970946	.988601	.995273	.998541	1.000383
1.60	0.979569	0.995195	1.000781	1.003356	1.004708
1.65	.987983	1.001617	1.006142	1.008040	1.008916
1.70	.996199	1.007879	1.011366	1.012603	1.013013
1.75	1.004230	1.013991	1.016461	1.017052	1.017007
1.80	1.012087	1.019961	1.021435	1.021395	1.020905
1.85	1.019779	1.025798	1.026297	1.025637	1.024712
1.90	1.027315	1.031510	1.031051	1.029784	1.028433
1.95	1.034705	1.037104	1.035705	1.033843	1.032073
2.00	1.041955	1.042586	1.040263	1.037817	1.035637
2.0	1.041955	1.042586	1.040263	1.037817	1.035637
2.2	1.069696	1.063509	1.057641	1.052958	1.049208
2.4	1.095692	1.083043	1.073839	1.067056	1.061835
2.6	1.120229	1.101425	1.089059	1.080289	1.073679
2.8	1.143528	1.118833	1.103452	1.092793	1.084863
3.0	1.165762	1.135406	1.117139	1.104672	1.095482
3.2	1.187070	1.151256	1.130213	1.116012	1.105612
3.4	1.207563	1.166472	1.142751	1.126878	1.115315
3.6	1.227334	1.181127	1.154816	1.137327	1.124639
3.8	1.246459	1.195283	1.166458	1.147404	1.133627
4.0	1.265003	1.208989	1.177722	1.157148	1.142314
4.2	1.283020	1.222290	1.188645	1.166590	1.150728
4.4	1.300557	1.235223	1.199256	1.175759	1.158896
4.6	1.317654	1.247818	1.209585	1.184679	1.166838
4.8	1.334346	1.260104	1.219653	1.193370	1.174574
5.0	1.350665	1.272105	1.229482	1.201851	1.182120
5.2	1.366636	1.283841	1.239089	1.210137	1.189490
5.4	1.382284	1.295333	1.248491	1.218242	1.196698
5.6	1.397630	1.306595	1.257701	1.226180	1.203754
5.8	1.412694	1.317644	1.266732	1.233961	1.210668
6.0	1.427492	1.328493	1.275596	1.241595	1.217450
6.2	1.442039	1.339153	1.284303	1.249091	1.224108
6.4	1.456350	1.349635	1.292862	1.256457	1.230649
6.6	1.470437	1.359950	1.301280	1.263701	1.237080
6.8	1.484312	1.370105	1.309567	1.270830	1.243407
7.0	1.497985	1.380111	1.317729	1.277848	1.249636

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)] / \sqrt{2nx}$

X	n = 13	n = 15	n = 17	n = 19	n = 21
0.60	0.883939	0.893041	0.900372	0.906431	0.911542
.65	.894157	.902552	.909302	.914872	.919566
.70	.903519	.911263	.917477	.922599	.926910
.75	.912161	.919300	.925019	.929725	.933681
.80	.920190	.926764	.932021	.936341	.939967
0.85	0.927691	0.933736	0.938560	0.942517	0.945835
.90	.934734	.940280	.944697	.948313	.951340
.95	.941376	.946450	.950481	.953775	.956528
1.00	.947663	.952289	.955954	.958943	.961436
1.05	.953635	.957834	.961152	.963850	.966096
1.10	0.959326	0.963117	0.966103	0.968524	0.970533
1.15	.964763	.968165	.970832	.972987	.974771
1.20	.969972	.972999	.975361	.977261	.978828
1.25	.974974	.977640	.979708	.981364	.982722
1.30	.979787	.982105	.983890	.985309	.986467
1.35	0.984427	0.986408	0.987920	0.989112	0.990076
1.40	.988907	.990564	.991811	.992782	.993559
1.45	.993242	.994583	.995574	.996331	.996927
1.50	.997441	.998476	.999219	.999769	1.000188
1.55	1.001515	1.002253	1.002753	1.003102	1.003350
1.60	1.005472	1.005921	1.006186	1.006339	1.006421
1.65	1.009321	1.009488	1.009524	1.009486	1.009406
1.70	1.013069	1.012960	1.012773	1.012549	1.012311
1.75	1.016721	1.016344	1.015939	1.015533	1.015141
1.80	1.020285	1.019645	1.019027	1.018444	1.017901
1.85	1.023764	1.022868	1.022041	1.021285	1.020595
1.90	1.027165	1.026018	1.024987	1.024061	1.023227
1.95	1.030492	1.029098	1.027868	1.026776	1.025801
2.00	1.033749	1.032113	1.030687	1.029432	1.028319
2.0	1.033749	1.032113	1.030687	1.029432	1.028319
2.2	1.046143	1.043585	1.041411	1.039535	1.037894
2.4	1.057669	1.054248	1.051375	1.048918	1.046785
2.6	1.068474	1.064240	1.060708	1.057704	1.055108
2.8	1.078672	1.073666	1.069509	1.065987	1.062952
3.0	1.088350	1.082607	1.077856	1.073839	1.070386
3.2	1.097578	1.091130	1.085808	1.081320	1.077467
3.4	1.106412	1.099286	1.093417	1.088474	1.084238
3.6	1.114898	1.107119	1.100722	1.095341	1.090735
3.8	1.123076	1.114664	1.107756	1.101952	1.096988
4.0	1.130976	1.121950	1.114547	1.108334	1.103024
4.2	1.138626	1.129004	1.121120	1.114509	1.108863
4.4	1.146048	1.135846	1.127495	1.120496	1.114523
4.6	1.153264	1.142496	1.133688	1.126313	1.120021
4.8	1.160290	1.148970	1.139716	1.131972	1.125369
5.0	1.167142	1.155281	1.145592	1.137488	1.130581
5.2	1.173832	1.161442	1.151326	1.142870	1.135666
5.4	1.180373	1.167463	1.156931	1.148129	1.140633
5.6	1.186774	1.173356	1.162413	1.153273	1.145492
5.8	1.193046	1.179128	1.167783	1.158310	1.150249
6.0	1.199196	1.184787	1.173046	1.163247	1.154910
6.2	1.205233	1.190340	1.178211	1.168090	1.159483
6.4	1.211162	1.195793	1.183282	1.172845	1.163972
6.6	1.216990	1.201153	1.188265	1.177517	1.168381
6.8	1.222723	1.206424	1.193164	1.182110	1.172716
7.0	1.228366	1.211612	1.197986	1.186630	1.176981

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 23	n = 25	n = 27	n = 29	n = 31
0.6	0.915926	0.919737	0.923090	0.926067	0.928733
.7	.930600	.933803	.936615	.939110	.941342
.8	.943064	.945748	.948100	.950184	.952046
.9	.953919	.956148	.958099	.959824	.961362
1.0	.963553	.965378	.966971	.968375	.969626
1.1	0.972232	0.973691	0.974960	0.976076	0.977066
1.2	.980145	.981270	.982243	.983094	.983847
1.3	.987431	.988246	.988946	.989554	.990086
1.4	.994193	.994721	.995166	.995547	.995876
1.5	1.000514	1.000771	1.000978	1.001146	1.001284
1.6	1.006456	1.006459	1.006441	1.006408	1.006365
1.7	1.012070	1.011832	1.011601	1.011378	1.011164
1.8	1.017397	1.016930	1.016496	1.016093	1.015717
1.9	1.022472	1.021786	1.021158	1.020582	1.020051
2.0	1.027324	1.026427	1.025614	1.024872	1.024193
2.0	1.027324	1.026427	1.025614	1.024872	1.024193
2.2	1.036444	1.035151	1.033988	1.032935	1.031975
2.4	1.044911	1.043248	1.041758	1.040414	1.039193
2.6	1.052835	1.050824	1.049027	1.047410	1.045943
2.8	1.060302	1.057961	1.055874	1.053998	1.052299
3.0	1.067377	1.064723	1.062359	1.060238	1.058318
3.2	1.074113	1.071160	1.068532	1.066175	1.064046
3.4	1.080554	1.077313	1.074432	1.071850	1.069518
3.6	1.086733	1.083215	1.080090	1.077291	1.074764
3.8	1.092680	1.088894	1.085534	1.082525	1.079811
4.0	1.098418	1.094373	1.090785	1.087574	1.084678
4.2	1.103968	1.099672	1.095863	1.092455	1.089383
4.4	1.109347	1.104807	1.100783	1.097184	1.093941
4.6	1.114572	1.109794	1.105560	1.101775	1.098365
4.8	1.119653	1.114643	1.110206	1.106239	1.102667
5.0	1.124604	1.119368	1.114730	1.110587	1.106856
5.2	1.129434	1.123976	1.119143	1.114827	1.110940
5.4	1.134152	1.128476	1.123453	1.118967	1.114929
5.6	1.138766	1.132877	1.127667	1.123014	1.118828
5.8	1.143282	1.137185	1.131791	1.126975	1.122643
6.0	1.147708	1.141405	1.135831	1.130856	1.126380
6.2	1.152048	1.145544	1.139793	1.134660	1.130043
6.4	1.156309	1.149606	1.143680	1.138393	1.133638
6.6	1.160494	1.153596	1.147499	1.142059	1.137168
6.8	1.164608	1.157518	1.151251	1.145662	1.140637
7.0	1.168654	1.161375	1.154942	1.149205	1.144048

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)] / \sqrt{2nx}$

x	n=33	n=35	n=37	n=39	n=41
0.6	0.931138	0.933323	0.935317	0.937147	0.938834
.7	.943353	.945178	.946842	.948369	.949775
.8	.953721	.955240	.956623	.957891	.959058
.9	.962744	.963995	.965134	.966176	.967134
1.0	.970747	.971760	.972681	.973522	.974294
1.1	0.977952	0.978751	0.979474	0.980134	0.980739
1.2	.984518	.985119	.985663	.986157	.986609
1.3	.990558	.990979	.991357	.991698	.992009
1.4	.996162	.996415	.996638	.996838	.997016
1.5	1.001397	1.001492	1.001570	1.001637	1.001692
1.6	1.006315	1.006261	1.006204	1.006145	1.006085
1.7	1.010960	1.010765	1.010579	1.010401	1.010232
1.8	1.015365	1.015036	1.014728	1.014437	1.014164
1.9	1.019560	1.019103	1.018677	1.018279	1.017906
2.0	1.023567	1.022988	1.022450	1.021949	1.021481
2.0	1.023567	1.022988	1.022450	1.021949	1.021481
2.2	1.031095	1.030286	1.029537	1.028842	1.028194
2.4	1.038077	1.037052	1.036107	1.035231	1.034417
2.6	1.044606	1.043379	1.042249	1.041204	1.040232
2.8	1.050752	1.049335	1.048030	1.046824	1.045705
3.0	1.056572	1.054973	1.053503	1.052145	1.050885
3.2	1.062108	1.060337	1.058708	1.057205	1.055811
3.4	1.067398	1.065460	1.063680	1.062037	1.060514
3.6	1.072469	1.070372	1.068446	1.066668	1.065022
3.8	1.077346	1.075095	1.073028	1.071121	1.069356
4.0	1.082049	1.079648	1.077445	1.075414	1.073534
4.2	1.086595	1.084050	1.081715	1.079563	1.077570
4.4	1.090998	1.088313	1.085850	1.083580	1.081479
4.6	1.095272	1.092451	1.089863	1.087478	1.085272
4.8	1.099427	1.096473	1.093763	1.091267	1.088958
5.0	1.103473	1.100388	1.097560	1.094956	1.092546
5.2	1.107418	1.104206	1.101262	1.098551	1.096044
5.4	1.111270	1.107934	1.104876	1.102061	1.099457
5.6	1.115034	1.111576	1.108408	1.105490	1.102793
5.8	1.118718	1.115140	1.111863	1.108846	1.106056
6.0	1.122325	1.118631	1.115246	1.112131	1.109251
6.2	1.125862	1.122053	1.118563	1.115351	1.112383
6.4	1.129332	1.125410	1.121817	1.118510	1.115454
6.6	1.132739	1.128705	1.125011	1.121612	1.118470
6.8	1.136087	1.131944	1.128149	1.124658	1.121432
7.0	1.139379	1.135128	1.131235	1.127653	1.124344

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 43	n = 45	n = 47	n = 49	n = 51
0.6	0.940396	0.941847	0.943200	0.944464	0.945650
.7	.951075	.952283	.953408	.954459	.955444
.8	.960136	.961136	.962068	.962937	.963752
.9	.968018	.968838	.969600	.970311	.970977
1.0	.975006	.975665	.976277	.976848	.977381
1.1	0.981295	0.981809	0.982286	0.982730	0.983144
1.2	.987023	.987405	.987758	.988086	.988391
1.3	.992292	.992551	.992790	.993011	.993216
1.4	.997178	.997324	.997457	.997578	.997690
1.5	1.001740	1.001780	1.001813	1.001842	1.001866
1.6	1.006025	1.005964	1.005905	1.005846	1.005788
1.7	1.010070	1.009915	1.009767	1.009625	1.009489
1.8	1.013905	1.013660	1.013428	1.013208	1.012998
1.9	1.017555	1.017225	1.016912	1.016617	1.016337
2.0	1.021042	1.020629	1.020240	1.019873	1.019525
2.0	1.021042	1.020629	1.020240	1.019873	1.019525
2.2	1.027589	1.027021	1.026488	1.025985	1.025511
2.4	1.033656	1.032945	1.032277	1.031649	1.031056
2.6	1.039327	1.038481	1.037687	1.036940	1.036237
2.8	1.044663	1.043689	1.042776	1.041918	1.041110
3.0	1.049712	1.048617	1.047591	1.046628	1.045720
3.2	1.054514	1.053303	1.052169	1.051105	1.050103
3.4	1.059098	1.057777	1.056540	1.055379	1.054286
3.6	1.063492	1.062064	1.060728	1.059474	1.058294
3.8	1.067715	1.066184	1.064753	1.063409	1.062146
4.0	1.071786	1.070156	1.068632	1.067202	1.065857
4.2	1.075719	1.073993	1.072379	1.070866	1.069442
4.4	1.079528	1.077709	1.076008	1.074413	1.072913
4.6	1.083223	1.081313	1.079527	1.077853	1.076279
4.8	1.086814	1.084815	1.082947	1.081196	1.079550
5.0	1.090309	1.088224	1.086276	1.084450	1.082733
5.2	1.093716	1.091547	1.089520	1.087620	1.085835
5.4	1.097040	1.094789	1.092686	1.090714	1.088862
5.6	1.100289	1.097957	1.095778	1.093737	1.091818
5.8	1.103467	1.101056	1.098804	1.096693	1.094710
6.0	1.106579	1.104090	1.101765	1.099587	1.097541
6.2	1.109628	1.107063	1.104668	1.102423	1.100314
6.4	1.112619	1.109979	1.107514	1.105204	1.103035
6.6	1.115555	1.112842	1.110308	1.107934	1.105704
6.8	1.118439	1.115653	1.113052	1.110615	1.108326
7.0	1.121274	1.118417	1.115749	1.113250	1.110903

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n = 53	n = 55	n = 57	n = 59	n = 61
0.6	0.946765	0.947816	0.948808	0.949746	0.950636
.7	.956370	.957242	.958065	.958843	.959581
.8	.964517	.965237	.965916	.966558	.967167
.9	.971602	.972189	.972743	.973267	.973762
1.0	.977881	.978351	.978794	.979212	.979607
1.1	0.983531	0.983895	0.984237	0.984560	0.984865
1.2	.988676	.988943	.989193	.989429	.989651
1.3	.993406	.993584	.993750	.993906	.994052
1.4	.997792	.997887	.997974	.998056	.998131
1.5	1.001886	1.001903	1.001917	1.001929	1.001939
1.6	1.005730	1.005674	1.005620	1.005566	1.005513
1.7	1.009359	1.009234	1.009113	1.008998	1.008886
1.8	1.012798	1.012607	1.012425	1.012250	1.012083
1.9	1.016070	1.015817	1.015576	1.015345	1.015125
2.0	1.019195	1.018882	1.018584	1.018300	1.018028
2.0	1.019195	1.018882	1.018584	1.018300	1.018028
2.2	1.025062	1.024636	1.024231	1.023846	1.023478
2.4	1.030496	1.029965	1.029461	1.028982	1.028526
2.6	1.035572	1.034943	1.034347	1.033780	1.033240
2.8	1.040347	1.039625	1.038941	1.038291	1.037673
3.0	1.044864	1.044054	1.043287	1.042558	1.041865
3.2	1.049158	1.048264	1.047417	1.046613	1.045848
3.4	1.053256	1.052282	1.051359	1.050483	1.049650
3.6	1.057182	1.056130	1.055134	1.054190	1.053292
3.8	1.060954	1.059828	1.058762	1.057751	1.056790
4.0	1.064589	1.063392	1.062258	1.061182	1.060160
4.2	1.068101	1.066833	1.065634	1.064496	1.063415
4.4	1.071500	1.070165	1.068901	1.067703	1.066565
4.6	1.074796	1.073396	1.072070	1.070814	1.069620
4.8	1.077999	1.076535	1.075149	1.073835	1.072587
5.0	1.081116	1.079589	1.078144	1.076775	1.075474
5.2	1.084153	1.082566	1.081063	1.079639	1.078286
5.4	1.087117	1.085469	1.083911	1.082433	1.081030
5.6	1.090012	1.088306	1.086692	1.085163	1.083711
5.8	1.092843	1.091080	1.089412	1.087832	1.086331
6.0	1.095614	1.093795	1.092075	1.090444	1.088896
6.2	1.098329	1.096455	1.094683	1.093003	1.091409
6.4	1.100992	1.099064	1.097241	1.095513	1.093873
6.6	1.103605	1.101624	1.099751	1.097975	1.096290
6.8	1.106171	1.104138	1.102215	1.100394	1.098664
7.0	1.108694	1.106609	1.104638	1.102770	1.100997

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)]/\sqrt{2nx}$

X	n=63	n= 65	n= 67	n= 69	n=71
0.6	0.951482	0.952286	0.953053	0.953785	0.954484
.7	.960282	.960948	.961583	.962188	.962767
.8	.967744	.968293	.968816	.969314	.969790
.9	.974232	.974679	.975104	.975509	.975895
1.0	.979982	.980337	.980676	.980998	.981305
1.1	0.985153	0.985427	0.985687	0.985934	0.986170
1.2	.989862	.990060	.990249	.990428	.990599
1.3	.994190	.994320	.994443	.994559	.994670
1.4	.998202	.998268	.998330	.998388	.998442
1.5	1.001946	1.001953	1.001957	1.001961	1.001963
1.6	1.005462	1.005412	1.005363	1.005315	1.005268
1.7	1.008779	1.008676	1.008576	1.008480	1.008386
1.8	1.011923	1.011769	1.011621	1.011478	1.011341
1.9	1.014914	1.014712	1.014518	1.014331	1.014152
2.0	1.017769	1.017521	1.017283	1.017054	1.016835
2.0	1.017769	1.017521	1.017283	1.017054	1.016835
2.2	1.023128	1.022793	1.022472	1.022165	1.021870
2.4	1.028091	1.027675	1.027278	1.026897	1.026532
2.6	1.032726	1.032234	1.031765	1.031315	1.030884
2.8	1.037083	1.036521	1.035983	1.035469	1.034976
3.0	1.041204	1.040574	1.039972	1.039396	1.038844
3.2	1.045120	1.044426	1.043762	1.043128	1.042520
3.4	1.048858	1.048101	1.047379	1.046688	1.046027
3.6	1.052436	1.051621	1.050842	1.050098	1.049385
3.8	1.055875	1.055002	1.054169	1.053373	1.052610
4.0	1.059187	1.058260	1.057374	1.056528	1.055717
4.2	1.062386	1.061405	1.060469	1.059574	1.058717
4.4	1.065482	1.064449	1.063464	1.062521	1.061620
4.6	1.068483	1.067401	1.066367	1.065379	1.064434
4.8	1.071399	1.070268	1.069187	1.068155	1.067167
5.0	1.074236	1.073057	1.071931	1.070855	1.069826
5.2	1.077000	1.075774	1.074604	1.073486	1.072416
5.4	1.079696	1.078424	1.077211	1.076052	1.074942
5.6	1.082329	1.081013	1.079757	1.078558	1.077410
5.8	1.084904	1.083544	1.082247	1.081007	1.079822
6.0	1.087424	1.086021	1.084683	1.083405	1.082182
6.2	1.089892	1.088448	1.087070	1.085753	1.084494
6.4	1.092313	1.090827	1.089410	1.088056	1.086760
6.6	1.094688	1.093161	1.091705	1.090315	1.088984
6.8	1.097020	1.095454	1.093960	1.092533	1.091168
7.0	1.099311	1.097706	1.096175	1.094712	1.093313

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 73	n = 75	n = 77	n = 79	n = 81
0.6	0.955153	0.955794	0.956408	0.956998	0.957566
.7	.963320	.963850	.964358	.964846	.965315
.8	.970245	.970681	.971098	.971499	.971884
.9	.976265	.976618	.976957	.977282	.977594
1.0	.981598	.981879	.982148	.982405	.982653
1.1	0.986395	0.986610	0.986816	0.987013	0.987202
1.2	.990761	.990916	.991064	.991206	.991342
1.3	.994774	.994874	.994969	.995060	.995147
1.4	.998494	.998542	.998588	.998632	.998672
1.5	1.001965	1.001965	1.001965	1.001964	1.001962
1.6	1.005223	1.005178	1.005134	1.005092	1.005050
1.7	1.008296	1.008209	1.008125	1.008043	1.007963
1.8	1.011209	1.011081	1.010958	1.010839	1.010724
1.9	1.013980	1.013813	1.013653	1.013498	1.013349
2.0	1.016624	1.016421	1.016225	1.016037	1.015854
2.0	1.016624	1.016421	1.016225	1.016037	1.015854
2.2	1.021587	1.021314	1.021052	1.020799	1.020555
2.4	1.026181	1.025844	1.025520	1.025208	1.024907
2.6	1.030471	1.030073	1.029691	1.029323	1.028969
2.8	1.034503	1.034049	1.033612	1.033192	1.032787
3.0	1.038315	1.037807	1.037318	1.036848	1.036396
3.2	1.041937	1.041378	1.040840	1.040322	1.039824
3.4	1.045393	1.044784	1.044199	1.043636	1.043094
3.6	1.048702	1.048046	1.047415	1.046809	1.046225
3.8	1.051880	1.051178	1.050504	1.049856	1.049232
4.0	1.054940	1.054195	1.053479	1.052791	1.052128
4.2	1.057896	1.057108	1.056351	1.055624	1.054923
4.4	1.060756	1.059927	1.059130	1.058365	1.057628
4.6	1.063528	1.062659	1.061824	1.061022	1.060250
4.8	1.066221	1.065313	1.064441	1.063602	1.062796
5.0	1.068840	1.067894	1.066986	1.066112	1.065272
5.2	1.071391	1.070408	1.069464	1.068557	1.067684
5.4	1.073880	1.072860	1.071882	1.070941	1.070036
5.6	1.076310	1.075255	1.074243	1.073269	1.072333
5.8	1.078686	1.077596	1.076550	1.075545	1.074578
6.0	1.081010	1.079887	1.078808	1.077772	1.076775
6.2	1.083288	1.082131	1.081020	1.079953	1.078926
6.4	1.085520	1.084330	1.083188	1.082091	1.081035
6.6	1.087710	1.086488	1.085316	1.084188	1.083104
6.8	1.089860	1.088607	1.087404	1.086248	1.085136
7.0	1.091973	1.090689	1.089456	1.088271	1.087131

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=83	n= 85	n=87	n= 89	n= 91
0.6	0.958112	0.958638	0.959145	0.959634	0.960106
.7	.965766	.966200	.966619	.967022	.967412
.8	.972254	.972611	.972954	.973285	.973605
.9	.977894	.978183	.978461	.978729	.978987
1.0	.982890	.983119	.983339	.983551	.983755
1.1	0.987383	0.987557	0.987725	0.987886	0.988042
1.2	.991472	.991596	.991716	.991832	.991943
1.3	.995229	.995309	.995385	.995458	.995528
1.4	.998712	.998748	.998784	.998817	.998849
1.5	1.001960	1.001958	1.001955	1.001952	1.001948
1.6	1.005010	1.004970	1.004931	1.004893	1.004856
1.7	1.007886	1.007812	1.007739	1.007668	1.007600
1.8	1.010612	1.010504	1.010399	1.010297	1.010199
1.9	1.013204	1.013064	1.012929	1.012798	1.012671
2.0	1.015678	1.015508	1.015343	1.015184	1.015030
2.0	1.015678	1.015508	1.015343	1.015184	1.015030
2.2	1.020320	1.020093	1.019873	1.019660	1.019454
2.4	1.024617	1.024336	1.024066	1.023804	1.023550
2.6	1.028627	1.028297	1.027978	1.027670	1.027372
2.8	1.032396	1.032020	1.031656	1.031304	1.030964
3.0	1.035959	1.035538	1.035132	1.034739	1.034359
3.2	1.039344	1.038881	1.038433	1.038001	1.037583
3.4	1.042572	1.042069	1.041582	1.041112	1.040658
3.6	1.045663	1.045120	1.044597	1.044091	1.043602
3.8	1.048631	1.048051	1.047492	1.046951	1.046428
4.0	1.051489	1.050874	1.050279	1.049705	1.049150
4.2	1.054249	1.053598	1.052970	1.052364	1.051777
4.4	1.056918	1.056234	1.055573	1.054935	1.054319
4.6	1.059506	1.058789	1.058096	1.057428	1.056782
4.8	1.062019	1.061270	1.060547	1.059848	1.059174
5.0	1.064463	1.063682	1.062929	1.062202	1.061500
5.2	1.066843	1.066032	1.065250	1.064495	1.063765
5.4	1.069164	1.068324	1.067513	1.066730	1.065974
5.6	1.071431	1.070562	1.069723	1.068913	1.068130
5.8	1.073646	1.072749	1.071883	1.071046	1.070238
6.0	1.075814	1.074889	1.073996	1.073134	1.072301
6.2	1.077938	1.076985	1.076065	1.075178	1.074320
6.4	1.080019	1.079039	1.078094	1.077181	1.076300
6.6	1.082060	1.081054	1.080084	1.079147	1.078242
6.8	1.084065	1.083033	1.082037	1.081076	1.080148
7.0	1.086034	1.084976	1.083956	1.082971	1.082020

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n = 93	n = 95	n = 97	n = 99	n = 101
0.6	0.960562	0.961003	0.961431	0.961844	0.962245
.7	.967788	.968152	.968505	.968846	.969176
.8	.973914	.974212	.974501	.974780	.975051
.9	.979237	.979478	.979711	.979937	.980156
1.0	.983952	.984143	.984327	.984505	.984677
1.1	0.988192	0.988336	0.988476	0.988612	0.988742
1.2	.992050	.992153	.992252	.992348	.992441
1.3	.995595	.995660	.995722	.995782	.995840
1.4	.998880	.998909	.998937	.998963	.998989
1.5	1.001944	1.001940	1.001936	1.001931	1.001926
1.6	1.004820	1.004785	1.004750	1.004716	1.004683
1.7	1.007533	1.007468	1.007405	1.007343	1.007283
1.8	1.010103	1.010010	1.009919	1.009831	1.009746
1.9	1.012547	1.012427	1.012311	1.012198	1.012088
2.0	1.014880	1.014734	1.014593	1.014456	1.014323
2.2	1.019255	1.019062	1.018874	1.018692	1.018515
2.4	1.023304	1.023066	1.022836	1.022612	1.022394
2.6	1.027084	1.026804	1.026533	1.026270	1.026014
2.8	1.030635	1.030316	1.030006	1.029706	1.029415
3.0	1.033991	1.033634	1.033289	1.032954	1.032629
3.2	1.037178	1.036787	1.036407	1.036039	1.035682
3.4	1.040218	1.039793	1.039380	1.038980	1.038592
3.6	1.043128	1.042670	1.042226	1.041796	1.041378
3.8	1.045923	1.045433	1.044959	1.044499	1.044053
4.0	1.048613	1.048093	1.047590	1.047102	1.046628
4.2	1.051210	1.050661	1.050129	1.049614	1.049114
4.4	1.053722	1.053145	1.052586	1.052043	1.051518
4.6	1.056157	1.055552	1.054966	1.054398	1.053847
4.8	1.058521	1.057889	1.057278	1.056684	1.056109
5.0	1.060820	1.060162	1.059525	1.058908	1.058309
5.2	1.063059	1.062376	1.061714	1.061073	1.060451
5.4	1.065242	1.064534	1.063848	1.063184	1.062539
5.6	1.067374	1.066641	1.065932	1.065244	1.064578
5.8	1.069457	1.068701	1.067968	1.067259	1.066570
6.0	1.071495	1.070716	1.069961	1.069229	1.068520
6.2	1.073491	1.072689	1.071912	1.071159	1.070429
6.4	1.075447	1.074622	1.073824	1.073050	1.072299
6.6	1.077366	1.076519	1.075699	1.074904	1.074134
6.8	1.079250	1.078381	1.077540	1.076725	1.075935
7.0	1.081100	1.080210	1.079348	1.078514	1.077704

TABLE OF $|\log_e F(\frac{1}{2}n, \frac{1}{2}; x)|/\sqrt{2nx}$

X	n=103	n= 105	n=107	n= 109	n= 111
0.6	0.962634	0.963011	0.963377	0.963733	0.964078
.7	.969496	.969807	.970109	.970402	.970687
.8	.975313	.975568	.975814	.976054	.976287
.9	.980368	.980573	.980772	.980966	.981154
1.0	.984844	.985006	.985163	.985315	.985463
1.1	0.988869	0.988992	0.989110	0.989226	0.989338
1.2	.992531	.992618	.992702	.992784	.992863
1.3	.995896	.995950	.996002	.996053	.996102
1.4	.999013	.999037	.999059	.999081	.999102
1.5	1.001922	1.001916	1.001911	1.001906	1.001901
1.6	1.004650	1.004619	1.004587	1.004557	1.004527
1.7	1.007224	1.007167	1.007111	1.007057	1.007003
1.8	1.009662	1.009581	1.009502	1.009425	1.009349
1.9	1.011981	1.011877	1.011775	1.011677	1.011580
2.0	1.014193	1.014067	1.013945	1.013825	1.013709
2.0	1.014193	1.014067	1.013945	1.013825	1.013709
2.2	1.018343	1.018176	1.018013	1.017855	1.017701
2.4	1.022183	1.021978	1.021778	1.021584	1.021395
2.6	1.025766	1.025525	1.025291	1.025063	1.024841
2.8	1.029132	1.028858	1.028591	1.028331	1.028078
3.0	1.032314	1.032007	1.031709	1.031419	1.031137
3.2	1.035335	1.034998	1.034670	1.034352	1.034042
3.4	1.038216	1.037850	1.037494	1.037148	1.036812
3.6	1.040973	1.040579	1.040196	1.039824	1.039462
3.8	1.043620	1.043199	1.042791	1.042393	1.042007
4.0	1.046168	1.045722	1.045288	1.044867	1.044456
4.2	1.048628	1.048157	1.047699	1.047254	1.046820
4.4	1.051007	1.050512	1.050030	1.049562	1.049107
4.6	1.053313	1.052794	1.052290	1.051799	1.051322
4.8	1.055551	1.055009	1.054483	1.053971	1.053473
5.0	1.057728	1.057164	1.056616	1.056083	1.055565
5.2	1.059847	1.059261	1.058692	1.058139	1.057601
5.4	1.061914	1.061307	1.060717	1.060144	1.059586
5.6	1.063931	1.063303	1.062693	1.062101	1.061524
5.8	1.065903	1.065255	1.064625	1.064013	1.063418
6.0	1.067832	1.067164	1.066514	1.065884	1.065270
6.2	1.069720	1.069033	1.068365	1.067716	1.067084
6.4	1.071571	1.070864	1.070178	1.069511	1.068862
6.6	1.073387	1.072661	1.071956	1.071271	1.070605
6.8	1.075168	1.074424	1.073702	1.072999	1.072316
7.0	1.076919	1.076156	1.075416	1.074697	1.073997

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=113	n= 115	n= 117	n=119	n= 121
0.6	0.964414	0.964741	0.965060	0.965370	0.965672
.7	.970963	.971233	.971495	.971750	.971998
.8	.976514	.976734	.976948	.977157	.977360
.9	.981336	.981514	.981686	.981854	.982018
1.0	.985607	.985747	.985882	.986015	.986143
1.1	0.989446	0.989552	0.989654	0.989754	0.989851
1.2	.992939	.993014	.993086	.993156	.993225
1.3	.996149	.996195	.996239	.996282	.996324
1.4	.999122	.999141	.999160	.999178	.999195
1.5	1.001895	1.001890	1.001884	1.001878	1.001873
1.6	1.004497	1.004468	1.004440	1.004412	1.004385
1.7	1.006951	1.006900	1.006851	1.006802	1.006755
1.8	1.009276	1.009204	1.009134	1.009066	1.008999
1.9	1.011486	1.011395	1.011305	1.011218	1.011133
2.0	1.013595	1.013485	1.013377	1.013271	1.013168
2.0	1.013595	1.013485	1.013377	1.013271	1.013168
2.2	1.017551	1.017404	1.017262	1.017122	1.016986
2.4	1.021210	1.021031	1.020856	1.020685	1.020518
2.6	1.024625	1.024414	1.024209	1.024009	1.023813
2.8	1.027832	1.027592	1.027359	1.027131	1.026909
3.0	1.030863	1.030595	1.030335	1.030081	1.029833
3.2	1.033740	1.033447	1.033160	1.032881	1.032609
3.4	1.036484	1.036165	1.035855	1.035552	1.035256
3.6	1.039110	1.038767	1.038433	1.038107	1.037789
3.8	1.041631	1.041264	1.040908	1.040560	1.040221
4.0	1.044057	1.043669	1.043290	1.042921	1.042561
4.2	1.046399	1.045989	1.045589	1.045200	1.044820
4.4	1.048664	1.048232	1.047812	1.047403	1.047004
4.6	1.050858	1.050407	1.049967	1.049538	1.049120
4.8	1.052989	1.052518	1.052058	1.051611	1.051174
5.0	1.055060	1.054570	1.054092	1.053626	1.053172
5.2	1.057077	1.056568	1.056071	1.055588	1.055116
5.4	1.059044	1.058516	1.058002	1.057500	1.057012
5.6	1.060963	1.060417	1.059886	1.059367	1.058862
5.8	1.062839	1.062275	1.061726	1.061192	1.060671
6.0	1.064674	1.064093	1.063527	1.062976	1.062439
6.2	1.066470	1.065873	1.065291	1.064724	1.064171
6.4	1.068231	1.067617	1.067018	1.066436	1.065868
6.6	1.069958	1.069327	1.068713	1.068115	1.067532
6.8	1.071652	1.071006	1.070376	1.069763	1.069165
7.0	1.073316	1.072654	1.072009	1.071381	1.070769

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=123	n=125	n=127	n=129	n=131
0.6	0.965966	0.966253	0.966533	0.966806	0.967073
.7	.972241	.972477	.972707	.972932	.973152
.8	.977558	.977751	.977939	.978123	.978302
.9	.982178	.982333	.982484	.982632	.982776
1.0	.986268	.986390	.986509	.986626	.986739
1.1	0.989946	0.990038	0.990127	0.990215	0.990300
1.2	.993291	.993356	.993419	.993480	.993540
1.3	.996365	.996404	.996442	.996480	.996516
1.4	.999212	.999228	.999243	.999258	.999273
1.5	1.001867	1.001861	1.001856	1.001850	1.001844
1.6	1.004359	1.004332	1.004307	1.004281	1.004256
1.7	1.006708	1.006662	1.006618	1.006574	1.006531
1.8	1.008933	1.008869	1.008807	1.008746	1.008686
1.9	1.011049	1.010968	1.010888	1.010810	1.010734
2.0	1.013068	1.012970	1.012874	1.012780	1.012688
2.0	1.013068	1.012970	1.012874	1.012780	1.012688
2.2	1.016854	1.016724	1.016598	1.016474	1.016353
2.4	1.020356	1.020197	1.020042	1.019891	1.019742
2.6	1.023623	1.023437	1.023255	1.023078	1.022904
2.8	1.026692	1.026480	1.026273	1.026072	1.025874
3.0	1.029591	1.029355	1.029125	1.028900	1.028680
3.2	1.032344	1.032085	1.031832	1.031585	1.031343
3.4	1.034968	1.034687	1.034412	1.034144	1.033882
3.6	1.037479	1.037177	1.036882	1.036594	1.036312
3.8	1.039890	1.039567	1.039252	1.038944	1.038644
4.0	1.042210	1.041868	1.041534	1.041207	1.040888
4.2	1.044449	1.044088	1.043735	1.043390	1.043054
4.4	1.046614	1.046235	1.045864	1.045502	1.045148
4.6	1.048713	1.048315	1.047927	1.047548	1.047177
4.8	1.050749	1.050334	1.049929	1.049533	1.049147
5.0	1.052729	1.052297	1.051875	1.051464	1.051061
5.2	1.054656	1.054208	1.053770	1.053343	1.052925
5.4	1.056536	1.056071	1.055618	1.055175	1.054742
5.6	1.058370	1.057890	1.057421	1.056963	1.056516
5.8	1.060162	1.059666	1.059183	1.058710	1.058249
6.0	1.061916	1.061405	1.060906	1.060419	1.059944
6.2	1.063632	1.063106	1.062593	1.062092	1.061603
6.4	1.065314	1.064774	1.064246	1.063732	1.063229
6.6	1.066963	1.066409	1.065868	1.065339	1.064823
6.8	1.068582	1.068013	1.067458	1.066917	1.066388
7.0	1.070172	1.069589	1.069021	1.068466	1.067924

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=133	n=135	n=137	n=139	n=141
0.6	0.967334	0.967588	0.967837	0.968080	0.968318
.7	.973366	.973575	.973780	.973980	.974175
.8	.978477	.978648	.978815	.978978	.979138
.9	.982917	.983055	.983189	.983320	.983448
1.0	.986849	.986957	.987062	.987165	.987266
1.1	0.990383	0.990464	0.990544	0.990621	0.990696
1.2	.993598	.993655	.993710	.993764	.993817
1.3	.996552	.996586	.996619	.996652	.996684
1.4	.999287	.999301	.999314	.999327	.999339
1.5	1.001838	1.001833	1.001827	1.001821	1.001816
1.6	1.004232	1.004208	1.004184	1.004161	1.004139
1.7	1.006489	1.006448	1.006408	1.006368	1.006329
1.8	1.008627	1.008569	1.008513	1.008458	1.008404
1.9	1.010659	1.010586	1.010515	1.010445	1.010376
2.0	1.012598	1.012510	1.012424	1.012340	1.012258
2.0	1.012598	1.012510	1.012424	1.012340	1.012258
2.2	1.016234	1.016119	1.016005	1.015894	1.015786
2.4	1.019598	1.019456	1.019317	1.019182	1.019049
2.6	1.022735	1.022569	1.022407	1.022248	1.022092
2.8	1.025681	1.025493	1.025308	1.025127	1.024951
3.0	1.028465	1.028254	1.028049	1.027848	1.027651
3.2	1.031107	1.030876	1.030651	1.030430	1.030214
3.4	1.033626	1.033376	1.033131	1.032892	1.032657
3.6	1.036037	1.035767	1.035504	1.035247	1.034995
3.8	1.038350	1.038063	1.037782	1.037507	1.037238
4.0	1.040577	1.040272	1.039974	1.039683	1.039398
4.2	1.042725	1.042404	1.042089	1.041782	1.041481
4.4	1.044803	1.044465	1.044134	1.043811	1.043495
4.6	1.046816	1.046462	1.046116	1.045778	1.045447
4.8	1.048769	1.048400	1.048039	1.047686	1.047341
5.0	1.050668	1.050284	1.049909	1.049542	1.049182
5.2	1.052518	1.052119	1.051729	1.051348	1.050975
5.4	1.054320	1.053907	1.053503	1.053108	1.052722
5.6	1.056079	1.055652	1.055235	1.054826	1.054427
5.8	1.057798	1.057357	1.056927	1.056505	1.056093
6.0	1.059479	1.059025	1.058581	1.058147	1.057723
6.2	1.061125	1.060658	1.060201	1.059755	1.059318
6.4	1.062738	1.062258	1.061789	1.061330	1.060881
6.6	1.064319	1.063827	1.063345	1.062874	1.062413
6.8	1.065871	1.065366	1.064872	1.064390	1.063917
7.0	1.067395	1.066878	1.066372	1.065878	1.065394

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=143	n=145	n=147	n=149	n=151
0.6	0.968551	0.968779	0.969002	0.969220	0.969434
.7	.974366	.974554	.974737	.974916	.975092
.8	.979294	.979446	.979596	.979742	.979885
.9	.983574	.983697	.983817	.983934	.984049
1.0	.987364	.987460	.987554	.987646	.987736
1.1	0.990770	0.990842	0.990913	0.990982	0.991050
1.2	.993869	.993919	.993968	.994016	.994063
1.3	.996715	.996745	.996775	.996804	.996832
1.4	.999351	.999363	.999374	.999385	.999396
1.5	1.001810	1.001804	1.001798	1.001793	1.001787
1.6	1.004116	1.004094	1.004072	1.004051	1.004030
1.7	1.006291	1.006253	1.006217	1.006180	1.006145
1.8	1.008350	1.008298	1.008247	1.008197	1.008148
1.9	1.010309	1.010243	1.010178	1.010114	1.010052
2.0	1.012177	1.012097	1.012020	1.011943	1.011868
2.0	1.012177	1.012097	1.012020	1.011943	1.011868
2.2	1.015679	1.015575	1.015473	1.015372	1.015274
2.4	1.018919	1.018791	1.018666	1.018544	1.018424
2.6	1.021940	1.021791	1.021645	1.021502	1.021361
2.8	1.024778	1.024608	1.024442	1.024279	1.024120
3.0	1.027458	1.027269	1.027084	1.026903	1.026725
3.2	1.030002	1.029795	1.029592	1.029393	1.029198
3.4	1.032428	1.032203	1.031983	1.031767	1.031556
3.6	1.034748	1.034506	1.034270	1.034038	1.033811
3.8	1.036975	1.036717	1.036465	1.036218	1.035975
4.0	1.039118	1.038845	1.038577	1.038315	1.038058
4.2	1.041186	1.040898	1.040615	1.040339	1.040068
4.4	1.043186	1.042883	1.042586	1.042295	1.042010
4.6	1.045123	1.044806	1.044495	1.044191	1.043893
4.8	1.047003	1.046672	1.046348	1.046030	1.045719
5.0	1.048830	1.048486	1.048149	1.047818	1.047495
5.2	1.050610	1.050252	1.049902	1.049559	1.049223
5.4	1.052344	1.051974	1.051611	1.051256	1.050908
5.6	1.054036	1.053654	1.053279	1.052912	1.052552
5.8	1.055690	1.055295	1.054908	1.054530	1.054158
6.0	1.057307	1.056900	1.056502	1.056112	1.055729
6.2	1.058890	1.058472	1.058062	1.057660	1.057267
6.4	1.060442	1.060011	1.059590	1.059178	1.058774
6.6	1.061962	1.061521	1.061089	1.060666	1.060251
6.8	1.063455	1.063003	1.062560	1.062126	1.061701
7.0	1.064921	1.064458	1.064004	1.063560	1.063124

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)]/\sqrt{2nx}$

x	n = 153	n = 155	n = 157	n = 159	n = 161
0.6	0.969644	0.969849	0.970050	0.970248	0.970441
.7	.975264	.975432	.975598	.975760	.975919
.8	.980026	.980163	.980298	.980430	.980560
.9	.984162	.984272	.984381	.984487	.984591
1.0	.987824	.987911	.987995	.988078	.988160
1.1	0.991116	0.991180	0.991244	0.991306	0.991367
1.2	.994110	.994154	.994199	.994242	.994284
1.3	.996860	.996886	.996913	.996938	.996964
1.4	.999406	.999416	.999426	.999436	.999445
1.5	1.001782	1.001776	1.001770	1.001765	1.001759
1.6	1.004010	1.003989	1.003969	1.003950	1.003930
1.7	1.006110	1.006076	1.006042	1.006009	1.005977
1.8	1.008100	1.008052	1.008006	1.007960	1.007915
1.9	1.009991	1.009931	1.009872	1.009814	1.009757
2.0	1.011795	1.011723	1.011652	1.011583	1.011515
2.0	1.011795	1.011723	1.011652	1.011583	1.011515
2.2	1.015178	1.015083	1.014990	1.014899	1.014810
2.4	1.018306	1.018190	1.018077	1.017966	1.017857
2.6	1.021224	1.021088	1.020956	1.020826	1.020698
2.8	1.023963	1.023810	1.023659	1.023512	1.023367
3.0	1.026551	1.026380	1.026212	1.026048	1.025887
3.2	1.029007	1.028820	1.028636	1.028456	1.028279
3.4	1.031348	1.031145	1.030946	1.030750	1.030558
3.6	1.033588	1.033370	1.033156	1.032945	1.032739
3.8	1.035738	1.035505	1.035276	1.035052	1.034832
4.0	1.037806	1.037559	1.037317	1.037079	1.036846
4.2	1.039802	1.039541	1.039286	1.039035	1.038789
4.4	1.041731	1.041457	1.041189	1.040926	1.040667
4.6	1.043600	1.043314	1.043033	1.042757	1.042487
4.8	1.045414	1.045115	1.044822	1.044535	1.044252
5.0	1.047178	1.046867	1.046562	1.046262	1.045969
5.2	1.048894	1.048571	1.048255	1.047944	1.047640
5.4	1.050567	1.050233	1.049905	1.049583	1.049268
5.6	1.052200	1.051854	1.051515	1.051183	1.050857
5.8	1.053795	1.053438	1.053089	1.052746	1.052409
6.0	1.055355	1.054987	1.054627	1.054274	1.053928
6.2	1.056882	1.056504	1.056133	1.055770	1.055414
6.4	1.058378	1.057990	1.057609	1.057236	1.056869
6.6	1.059845	1.059446	1.059056	1.058673	1.058297
6.8	1.061284	1.060876	1.060475	1.060083	1.059698
7.0	1.062698	1.062280	1.061870	1.061467	1.061073

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=163	n=165	n= 167	n=169	n=171
0.6	0.970631	0.970817	0.971000	0.971180	0.971356
.7	.976075	.976228	.976378	.976525	.976670
.8	.980686	.980811	.980934	.981054	.981171
.9	.984693	.984793	.984891	.984987	.985082
1.0	.988239	.988317	.988394	.988469	.988543
1.1	0.991426	0.991485	0.991542	0.991599	0.991654
1.2	.994326	.994366	.994406	.994445	.994483
1.3	.996988	.997012	.997036	.997059	.997082
1.4	.999454	.999463	.999472	.999480	.999488
1.5	1.001754	1.001748	1.001743	1.001738	1.001732
1.6	1.003911	1.003892	1.003874	1.003855	1.003837
1.7	1.005945	1.005913	1.005882	1.005852	1.005822
1.8	1.007870	1.007827	1.007784	1.007742	1.007701
1.9	1.009701	1.009646	1.009592	1.009539	1.009487
2.0	1.011448	1.011382	1.011317	1.011254	1.011191
2.0	1.011448	1.011382	1.011317	1.011254	1.011191
2.2	1.014722	1.014636	1.014551	1.014468	1.014386
2.4	1.017750	1.017644	1.017541	1.017439	1.017339
2.6	1.020573	1.020450	1.020329	1.020210	1.020094
2.8	1.023224	1.023084	1.022947	1.022812	1.022680
3.0	1.025728	1.025573	1.025420	1.025270	1.025122
3.2	1.028105	1.027934	1.027767	1.027602	1.027440
3.4	1.030370	1.030185	1.030003	1.029825	1.029650
3.6	1.032537	1.032338	1.032143	1.031951	1.031763
3.8	1.034616	1.034404	1.034196	1.033992	1.033791
4.0	1.036617	1.036392	1.036172	1.035955	1.035742
4.2	1.038547	1.038310	1.038078	1.037849	1.037625
4.4	1.040414	1.040165	1.039920	1.039680	1.039444
4.6	1.042221	1.041961	1.041705	1.041454	1.041207
4.8	1.043976	1.043704	1.043437	1.043175	1.042918
5.0	1.045681	1.045398	1.045120	1.044848	1.044580
5.2	1.047341	1.047047	1.046759	1.046476	1.046198
5.4	1.048958	1.048654	1.048356	1.048063	1.047776
5.6	1.050537	1.050223	1.049915	1.049612	1.049315
5.8	1.052079	1.051755	1.051437	1.051125	1.050818
6.0	1.053588	1.053254	1.052926	1.052604	1.052288
6.2	1.055064	1.054720	1.054383	1.054052	1.053728
6.4	1.056510	1.056157	1.055811	1.055471	1.055137
6.6	1.057928	1.057566	1.057211	1.056862	1.056520
6.8	1.059320	1.058949	1.058584	1.058227	1.057876
7.0	1.060686	1.060306	1.059933	1.059567	1.059208

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 173	n = 175	n = 177	n = 179	n = 181
0.6	0.971529	0.971699	0.971866	0.972030	0.972192
.7	.976812	.976951	.977088	.977223	.977356
.8	.981287	.981401	.981512	.981622	.981730
.9	.985174	.985265	.985355	.985443	.985529
1.0	.988616	.988687	.988757	.988825	.988893
1.1	0.991708	0.991761	0.991813	0.991865	0.991915
1.2	.994521	.994557	.994594	.994629	.994664
1.3	.997104	.997126	.997147	.997168	.997188
1.4	.999496	.999504	.999512	.999519	.999526
1.5	1.001727	1.001722	1.001716	1.001711	1.001706
1.6	1.003820	1.003802	1.003785	1.003768	1.003751
1.7	1.005792	1.005763	1.005734	1.005706	1.005678
1.8	1.007660	1.007620	1.007581	1.007542	1.007504
1.9	1.009436	1.009385	1.009336	1.009287	1.009239
2.0	1.011130	1.011069	1.011010	1.010951	1.010894
2.0	1.011130	1.011069	1.011010	1.010951	1.010894
2.2	1.014305	1.014226	1.014148	1.014072	1.013996
2.4	1.017241	1.017145	1.017050	1.016956	1.016865
2.6	1.019979	1.019866	1.019756	1.019647	1.019539
2.8	1.022550	1.022422	1.022296	1.022172	1.022051
3.0	1.024978	1.024835	1.024695	1.024558	1.024422
3.2	1.027282	1.027126	1.026972	1.026821	1.026673
3.4	1.029478	1.029308	1.029142	1.028978	1.028818
3.6	1.031578	1.031396	1.031218	1.031042	1.030869
3.8	1.033594	1.033400	1.033209	1.033022	1.032838
4.0	1.035533	1.035328	1.035126	1.034927	1.034732
4.2	1.037404	1.037187	1.036974	1.036765	1.036559
4.4	1.039213	1.038985	1.038761	1.038541	1.038325
4.6	1.040965	1.040726	1.040492	1.040262	1.040036
4.8	1.042665	1.042416	1.042172	1.041932	1.041696
5.0	1.044317	1.044059	1.043805	1.043555	1.043309
5.2	1.045926	1.045657	1.045394	1.045135	1.044880
5.4	1.047493	1.047215	1.046942	1.046674	1.046410
5.6	1.049023	1.048736	1.048454	1.048176	1.047904
5.8	1.050517	1.050221	1.049930	1.049644	1.049362
6.0	1.051978	1.051673	1.051373	1.051079	1.050789
6.2	1.053408	1.053094	1.052786	1.052483	1.052185
6.4	1.054809	1.054487	1.054170	1.053859	1.053553
6.6	1.056183	1.055852	1.055527	1.055208	1.054894
6.8	1.057531	1.057192	1.056859	1.056532	1.056210
7.0	1.058854	1.058507	1.058166	1.057831	1.057502

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 183	n = 185	n = 187	n = 189	n = 191
0.6	0.972350	0.972507	0.972660	0.972811	0.972960
.7	.977486	.977614	.977740	.977863	.977985
.8	.981836	.981940	.982042	.982143	.982242
.9	.985614	.985698	.985780	.985860	.985940
1.0	.988959	.989024	.989088	.989151	.989213
1.1	0.991964	0.992013	0.992061	0.992108	0.992154
1.2	.994698	.994732	.994764	.994797	.994829
1.3	.997208	.997228	.997248	.997266	.997285
1.4	.999533	.999540	.999547	.999554	.999560
1.5	1.001701	1.001696	1.001691	1.001686	1.001681
1.6	1.003734	1.003718	1.003702	1.003686	1.003670
1.7	1.005651	1.005624	1.005598	1.005571	1.005546
1.8	1.007466	1.007429	1.007393	1.007357	1.007321
1.9	1.009192	1.009145	1.009099	1.009054	1.009009
2.0	1.010837	1.010781	1.010726	1.010672	1.010619
2.0	1.010837	1.010781	1.010726	1.010672	1.010619
2.2	1.013922	1.013849	1.013777	1.013707	1.013637
2.4	1.016774	1.016686	1.016598	1.016512	1.016427
2.6	1.019434	1.019330	1.019228	1.019128	1.019029
2.8	1.021931	1.021813	1.021697	1.021583	1.021471
3.0	1.024289	1.024158	1.024029	1.023902	1.023777
3.2	1.026527	1.026383	1.026242	1.026103	1.025966
3.4	1.028659	1.028504	1.028351	1.028200	1.028052
3.6	1.030699	1.030532	1.030368	1.030206	1.030046
3.8	1.032656	1.032478	1.032303	1.032130	1.031960
4.0	1.034540	1.034351	1.034165	1.033982	1.033802
4.2	1.036356	1.036157	1.035961	1.035768	1.035578
4.4	1.038112	1.037903	1.037697	1.037495	1.037296
4.6	1.039813	1.039594	1.039379	1.039167	1.038959
4.8	1.041464	1.041236	1.041011	1.040790	1.040572
5.0	1.043068	1.042830	1.042597	1.042367	1.042141
5.2	1.044629	1.044383	1.044140	1.043902	1.043667
5.4	1.046151	1.045896	1.045645	1.045398	1.045155
5.6	1.047636	1.047372	1.047113	1.046857	1.046606
5.8	1.049086	1.048814	1.048546	1.048283	1.048024
6.0	1.050504	1.050224	1.049948	1.049677	1.049410
6.2	1.051892	1.051604	1.051321	1.051042	1.050767
6.4	1.053252	1.052956	1.052665	1.052378	1.052097
6.6	1.054585	1.054282	1.053983	1.053689	1.053400
6.8	1.055893	1.055582	1.055276	1.054975	1.054678
7.0	1.057177	1.056859	1.056545	1.056237	1.055934

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n = 193	n = 195	n = 197	n = 199	n = 201
0.6	0.973106	0.973249	0.973391	0.973530	0.973668
.7	.978105	.978223	.978339	.978453	.978566
.8	.982340	.982436	.982530	.982623	.982715
.9	.986018	.986095	.986170	.986245	.986318
1.0	.989274	.989334	.989392	.989450	.989508
1.1	0.992199	0.992244	0.992288	0.992331	0.992374
1.2	.994860	.994891	.994921	.994951	.994980
1.3	.997304	.997322	.997339	.997356	.997374
1.4	.999566	.999572	.999578	.999584	.999590
1.5	1.001676	1.001671	1.001666	1.001661	1.001656
1.6	1.003655	1.003639	1.003624	1.003609	1.003595
1.7	1.005520	1.005495	1.005470	1.005446	1.005422
1.8	1.007286	1.007252	1.007218	1.007185	1.007152
1.9	1.008965	1.008922	1.008880	1.008838	1.008796
2.0	1.010567	1.010515	1.010464	1.010414	1.010365
2.0	1.010567	1.010515	1.010464	1.010414	1.010365
2.2	1.013568	1.013501	1.013434	1.013369	1.013304
2.4	1.016344	1.016262	1.016180	1.016101	1.016022
2.6	1.018931	1.018835	1.018741	1.018648	1.018556
2.8	1.021360	1.021252	1.021144	1.021039	1.020935
3.0	1.023654	1.023533	1.023414	1.023297	1.023181
3.2	1.025831	1.025699	1.025568	1.025439	1.025312
3.4	1.027906	1.027762	1.027620	1.027481	1.027344
3.6	1.029890	1.029735	1.029583	1.029434	1.029286
3.8	1.031793	1.031629	1.031467	1.031307	1.031150
4.0	1.033625	1.033450	1.033279	1.033110	1.032943
4.2	1.035392	1.035208	1.035026	1.034848	1.034672
4.4	1.037099	1.036906	1.036716	1.036529	1.036344
4.6	1.038754	1.038551	1.038352	1.038156	1.037964
4.8	1.040358	1.040148	1.039940	1.039736	1.039535
5.0	1.041918	1.041699	1.041483	1.041271	1.041061
5.2	1.043436	1.043209	1.042985	1.042764	1.042547
5.4	1.044916	1.044680	1.044448	1.044220	1.043995
5.6	1.046359	1.046116	1.045876	1.045640	1.045408
5.8	1.047769	1.047518	1.047271	1.047028	1.046788
6.0	1.049148	1.048889	1.048635	1.048384	1.048138
6.2	1.050497	1.050232	1.049970	1.049712	1.049458
6.4	1.051819	1.051546	1.051277	1.051013	1.050752
6.6	1.053115	1.052835	1.052559	1.052288	1.052020
6.8	1.054387	1.054100	1.053817	1.053538	1.053264
7.0	1.055635	1.055341	1.055052	1.054767	1.054486

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 3	n = 5	n = 7	n = 9	n = 11
7	1.497985	1.380111	1.317729	1.277848	1.249636
8	1.563640	1.428121	1.356863	1.311483	1.279466
9	1.625432	1.473277	1.393636	1.343060	1.307449
10	1.684041	1.516097	1.428486	1.372966	1.333934
11	1.739959	1.556956	1.461727	1.401478	1.359172
12	1.793562	1.596136	1.493596	1.428802	1.383350
13	1.845140	1.633856	1.524274	1.455100	1.406613
14	1.894927	1.670287	1.553906	1.480498	1.429074
15	1.943113	1.705570	1.582607	1.505095	1.450824
16	1.989854	1.739820	1.610473	1.528976	1.471939
17	2.035283	1.773133	1.637583	1.552209	1.492479
18	2.079512	1.805592	1.664004	1.574854	1.512498
19	2.122637	1.837265	1.689794	1.596959	1.532040
20	2.164743	1.868214	1.715001	1.618567	1.551143
21	2.205903	1.898491	1.739669	1.639716	1.569840
22	2.246182	1.928142	1.763835	1.660438	1.588161
23	2.285636	1.957208	1.787593	1.680761	1.606131
24	2.324318	1.985726	1.810792	1.700711	1.623772
25	2.362274	2.013728	1.833638	1.720311	1.641105
26	2.399544	2.041244	1.856096	1.739582	1.658148
27	2.436166	2.068300	1.878186	1.758540	1.674916
28	2.472175	2.094921	1.899928	1.777204	1.691426
29	2.507602	2.121129	1.921340	1.795587	1.707690
30	2.542474	2.146943	1.942438	1.813705	1.723721
31	2.576820	2.172382	1.963237	1.831569	1.739530
32	2.610662	2.197464	1.983750	1.849192	1.755126
33	2.644022	2.222204	2.003990	1.866583	1.770520
34	2.676923	2.246616	2.023969	1.883754	1.785720
35	2.709382	2.270715	2.043697	1.900712	1.800735
36	2.741418	2.294512	2.063185	1.917467	1.815571
37	2.773048	2.318019	2.082441	1.934027	1.830236
38	2.804287	2.341248	2.101475	1.950398	1.844737
39	2.835150	2.364208	2.120295	1.966589	1.859078
40	2.865649	2.386910	2.138908	1.982604	1.873268
41	2.895800	2.409362	2.157322	1.998452	1.887309
42	2.925612	2.431573	2.175543	2.014136	1.901208
43	2.955098	2.453550	2.193578	2.029663	1.914970
44	2.984269	2.475302	2.211433	2.045038	1.928598
45	3.013135	2.496836	2.229113	2.060265	1.942097
45	3.013135	2.496836	2.229113	2.060265	1.942097
50	3.153205	2.601454	2.315076	2.134339	2.007790
55	3.286902	2.701496	2.397377	2.205318	2.070777
60	3.415038	2.797536	2.476472	2.273586	2.131393
65	3.538268	2.890036	2.552729	2.339452	2.189908
70	3.657125	2.979372	2.626445	2.403166	2.246541
75	3.772051	3.065859	2.697870	2.464940	2.301476
80	3.883417	3.149760	2.767214	2.524948	2.354865
85	3.991540	3.231300	2.834655	2.583342	2.406841
90	4.096691	3.310673	2.900348	2.640252	2.457517
95	4.199106	3.388046	2.964427	2.695790	2.506990
100	4.298989	3.463568	3.027008	2.750056	2.555348

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n = 13	n = 15	n = 17	n = 19	n = 21
7	1.228366	1.211612	1.197986	1.186630	1.176981
8	1.255376	1.236432	1.221046	1.208237	1.197365
9	1.280696	1.259685	1.242637	1.228458	1.216432
10	1.304648	1.281669	1.263041	1.247558	1.234435
11	1.327460	1.302599	1.282459	1.265730	1.251557
12	1.349307	1.322636	1.301041	1.283114	1.267932
13	1.370320	1.341902	1.318905	1.299820	1.283666
14	1.390604	1.360495	1.336140	1.315935	1.298839
15	1.410242	1.378493	1.352819	1.331528	1.313517
16	1.429304	1.395959	1.369003	1.346655	1.327755
17	1.447845	1.412946	1.384741	1.361363	1.341596
18	1.465914	1.429498	1.400074	1.375691	1.355077
19	1.483550	1.445654	1.415038	1.389672	1.368232
20	1.500791	1.461445	1.429664	1.403336	1.381086
21	1.517665	1.476900	1.443977	1.416707	1.393664
22	1.534198	1.492042	1.458000	1.429806	1.405985
23	1.550416	1.506895	1.471754	1.442653	1.418068
24	1.566337	1.521476	1.485256	1.455264	1.429929
25	1.581980	1.535802	1.498522	1.467655	1.441582
26	1.597362	1.549890	1.511567	1.479838	1.453039
27	1.612498	1.563752	1.524403	1.491826	1.464313
28	1.627401	1.577401	1.537042	1.503630	1.475413
29	1.642083	1.590849	1.549494	1.515259	1.486348
30	1.656555	1.604104	1.561768	1.526722	1.497128
31	1.670828	1.617177	1.573874	1.538028	1.507759
32	1.684910	1.630077	1.585819	1.549184	1.518250
33	1.698810	1.642810	1.597611	1.560197	1.528605
34	1.712537	1.655385	1.609256	1.571073	1.538832
35	1.726097	1.667808	1.620761	1.581818	1.548936
36	1.739497	1.680086	1.632131	1.592438	1.558923
37	1.752744	1.692223	1.643373	1.602938	1.568796
38	1.765843	1.704226	1.654490	1.613321	1.578560
39	1.778800	1.716099	1.665487	1.623594	1.588220
40	1.791621	1.727848	1.676370	1.633759	1.597780
41	1.804309	1.739476	1.687142	1.643820	1.607242
42	1.816870	1.750988	1.697806	1.653782	1.616610
43	1.829307	1.762388	1.708367	1.663648	1.625889
44	1.841625	1.773680	1.718828	1.673420	1.635079
45	1.853827	1.784866	1.729192	1.683103	1.644186
45	1.853827	1.784866	1.729192	1.683103	1.644186
50	1.913226	1.839329	1.779659	1.730256	1.688536
55	1.970204	1.891590	1.828098	1.775522	1.731119
60	2.025062	1.941923	1.874762	1.819140	1.772157
65	2.078040	1.990548	1.919855	1.861297	1.811828
70	2.129336	2.037644	1.963541	1.902147	1.850275
75	2.179112	2.083359	2.005957	1.941818	1.887619
80	2.227506	2.127818	2.047218	1.980417	1.923960
85	2.274636	2.171128	2.087422	2.018034	1.959382
90	2.320602	2.213380	2.126652	2.054748	1.993959
95	2.365491	2.254653	2.164983	2.090627	2.027756
100	2.409381	2.295018	2.202478	2.125729	2.060826

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 23	n = 25	n = 27	n = 29	n = 31
7	1.168654	1.161375	1.154942	1.149205	1.144048
8	1.187990	1.179801	1.172569	1.166123	1.160332
9	1.206069	1.197023	1.189038	1.181925	1.175537
10	1.223134	1.213273	1.204573	1.196826	1.189872
11	1.239358	1.228718	1.219335	1.210982	1.203486
12	1.254870	1.243482	1.233442	1.224508	1.216492
13	1.269771	1.257660	1.246987	1.237492	1.228975
14	1.284138	1.271328	1.260042	1.250004	1.241001
15	1.298034	1.284546	1.272665	1.262100	1.252627
16	1.311511	1.297363	1.284903	1.273825	1.263894
17	1.324610	1.309820	1.296796	1.285218	1.274841
18	1.337368	1.321950	1.308375	1.296310	1.285497
19	1.349815	1.333783	1.319670	1.307128	1.295890
20	1.361976	1.345344	1.330704	1.317695	1.306040
21	1.373875	1.356654	1.341498	1.328031	1.315967
22	1.385531	1.367732	1.352069	1.338154	1.325689
23	1.396960	1.378594	1.362434	1.348078	1.335220
24	1.408178	1.389255	1.372606	1.357817	1.344572
25	1.419200	1.399729	1.382599	1.367384	1.353758
26	1.430036	1.410026	1.392422	1.376788	1.362788
27	1.440698	1.420156	1.402087	1.386040	1.371671
28	1.451195	1.430130	1.411602	1.395148	1.380415
29	1.461536	1.439956	1.420975	1.404120	1.389029
30	1.471730	1.449641	1.430214	1.412963	1.397518
31	1.481783	1.459193	1.439325	1.421683	1.405890
32	1.491703	1.468617	1.448314	1.430288	1.414150
33	1.501496	1.477921	1.457188	1.438781	1.422303
34	1.511167	1.487109	1.465952	1.447168	1.430354
35	1.520721	1.496186	1.474610	1.455455	1.438308
36	1.530164	1.505157	1.483167	1.463644	1.446169
37	1.539500	1.514026	1.491626	1.471740	1.453940
38	1.548734	1.522798	1.499993	1.479747	1.461626
39	1.557869	1.531477	1.508270	1.487669	1.469229
40	1.566908	1.540064	1.516461	1.495507	1.476753
41	1.575856	1.548565	1.524569	1.503267	1.484201
42	1.584715	1.556982	1.532596	1.510949	1.491575
43	1.593489	1.565318	1.540547	1.518558	1.498878
44	1.602181	1.573575	1.548423	1.526095	1.506112
45	1.610792	1.581757	1.556226	1.533563	1.513280
45	1.610792	1.581757	1.556226	1.533563	1.513280
50	1.652737	1.621608	1.594237	1.569940	1.548195
55	1.693014	1.659878	1.630741	1.604876	1.581728
60	1.731834	1.696767	1.665930	1.638556	1.614056
65	1.769366	1.732436	1.699958	1.671126	1.645321
70	1.805746	1.767013	1.732949	1.702706	1.675636
75	1.841086	1.800607	1.765003	1.733392	1.705095
80	1.875482	1.833306	1.796208	1.763266	1.733778
85	1.909013	1.865188	1.826635	1.792399	1.761750
90	1.941749	1.896318	1.856347	1.820850	1.789070
95	1.973750	1.926751	1.885398	1.848670	1.815786
100	2.005068	1.956539	1.913835	1.875905	1.841942

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n = 33	n = 35	n = 37	n = 39	n = 41
7	1.139379	1.135128	1.131235	1.127653	1.124344
8	1.155092	1.150323	1.145957	1.141943	1.138235
9	1.169760	1.164503	1.159694	1.155272	1.151190
10	1.183585	1.177866	1.172635	1.167827	1.163389
11	1.196712	1.190551	1.184918	1.179742	1.174965
12	1.209250	1.202665	1.196645	1.191115	1.186013
13	1.221281	1.214287	1.207896	1.202024	1.196608
14	1.232871	1.225482	1.218730	1.212529	1.206810
15	1.244073	1.236300	1.229199	1.222678	1.216664
16	1.254928	1.246783	1.239342	1.232510	1.226210
17	1.265474	1.256965	1.249192	1.242057	1.235479
18	1.275738	1.266874	1.258779	1.251348	1.244498
19	1.285747	1.276536	1.268125	1.260405	1.253289
20	1.295522	1.285972	1.277251	1.269248	1.261872
21	1.305082	1.295199	1.286175	1.277895	1.270263
22	1.314443	1.304234	1.294912	1.286360	1.278478
23	1.323620	1.313089	1.303476	1.294656	1.286528
24	1.332624	1.321778	1.311878	1.302796	1.294426
25	1.341468	1.330312	1.320129	1.310788	1.302182
26	1.350160	1.338700	1.328239	1.318644	1.309803
27	1.358712	1.346950	1.336216	1.326370	1.317299
28	1.367129	1.355071	1.344067	1.333974	1.324676
29	1.375420	1.363070	1.351800	1.341464	1.331942
30	1.383591	1.370953	1.359420	1.348844	1.339101
31	1.391649	1.378726	1.366935	1.356121	1.346160
32	1.399599	1.386395	1.374348	1.363300	1.353124
33	1.407446	1.393965	1.381665	1.370386	1.359997
34	1.415194	1.401439	1.388890	1.377382	1.366783
35	1.422849	1.408823	1.396027	1.384293	1.373486
36	1.430414	1.416120	1.403080	1.391122	1.380110
37	1.437893	1.423334	1.410052	1.397874	1.386658
38	1.445289	1.430468	1.416947	1.404550	1.393133
39	1.452606	1.437526	1.423768	1.411154	1.399538
40	1.459846	1.444509	1.430518	1.417690	1.405876
41	1.467013	1.451422	1.437198	1.424158	1.412150
42	1.474109	1.458266	1.443813	1.430562	1.418360
43	1.481137	1.465044	1.450363	1.436905	1.424511
44	1.488098	1.471758	1.456852	1.443187	1.430604
45	1.494996	1.478410	1.463281	1.449412	1.436640
45	1.494996	1.478410	1.463281	1.449412	1.436640
50	1.528594	1.510814	1.494597	1.479730	1.466041
55	1.560862	1.541936	1.524672	1.508848	1.494277
60	1.591972	1.571940	1.553668	1.536920	1.521498
65	1.622059	1.600959	1.581712	1.564070	1.547826
70	1.651234	1.629098	1.608908	1.590400	1.573358
75	1.679586	1.656446	1.635339	1.615990	1.598174
80	1.707193	1.683076	1.661076	1.640909	1.622340
85	1.734118	1.709049	1.686180	1.665216	1.645912
90	1.760416	1.734419	1.710703	1.688961	1.668940
95	1.786134	1.759231	1.734688	1.712186	1.691465
100	1.811316	1.783527	1.758174	1.734929	1.713523

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 43	n = 45	n = 47	n = 49	n = 51
7	1.121274	1.118417	1.115749	1.113250	1.110903
8	1.134797	1.131597	1.128611	1.125814	1.123189
9	1.147405	1.143884	1.140598	1.137523	1.134635
10	1.159276	1.155451	1.151882	1.148541	1.145406
11	1.170538	1.166422	1.162583	1.158990	1.155618
12	1.181286	1.176891	1.172792	1.168957	1.165359
13	1.191592	1.186928	1.182579	1.178511	1.174694
14	1.201513	1.196590	1.191999	1.187705	1.183678
15	1.211096	1.205920	1.201095	1.196583	1.192351
16	1.220377	1.214957	1.209904	1.205180	1.200749
17	1.229389	1.223730	1.218456	1.213524	1.208900
18	1.238156	1.232265	1.226774	1.221640	1.216827
19	1.246702	1.240583	1.234881	1.229550	1.224552
20	1.255045	1.248703	1.242794	1.237270	1.232091
21	1.263201	1.256641	1.250529	1.244815	1.239460
22	1.271184	1.264411	1.258099	1.252200	1.246671
23	1.279008	1.272024	1.265517	1.259436	1.253736
24	1.286683	1.279492	1.272793	1.266532	1.260665
25	1.294219	1.286825	1.279937	1.273500	1.267468
26	1.301624	1.294030	1.286956	1.280346	1.274151
27	1.308907	1.301116	1.293859	1.287078	1.280723
28	1.316075	1.308090	1.300652	1.293702	1.287190
29	1.323134	1.314957	1.307341	1.300225	1.293558
30	1.330090	1.321724	1.313932	1.306652	1.299832
31	1.336947	1.328395	1.320430	1.312988	1.306016
32	1.343712	1.334976	1.326839	1.319238	1.312116
33	1.350388	1.341470	1.333164	1.325405	1.318136
34	1.356980	1.347882	1.339409	1.331494	1.324079
35	1.363492	1.354216	1.345577	1.337508	1.329949
36	1.369926	1.360474	1.351672	1.343450	1.335748
37	1.376286	1.366660	1.357696	1.349323	1.341480
38	1.382576	1.372777	1.363653	1.355131	1.347149
39	1.388797	1.378828	1.369546	1.360876	1.352755
40	1.394953	1.384816	1.375376	1.366560	1.358302
41	1.401046	1.390741	1.381146	1.372185	1.363792
42	1.407078	1.396608	1.386859	1.377754	1.369226
43	1.413052	1.402418	1.392516	1.383269	1.374608
44	1.418969	1.408172	1.398120	1.388732	1.379939
45	1.424832	1.413874	1.403672	1.394143	1.385220
45	1.424832	1.413874	1.403672	1.394143	1.385220
50	1.453386	1.441642	1.430709	1.420499	1.410938
55	1.480806	1.468307	1.456671	1.445806	1.435631
60	1.507242	1.494014	1.481700	1.470201	1.459434
65	1.532810	1.518877	1.505906	1.493795	1.482454
70	1.557604	1.542988	1.529381	1.516675	1.504778
75	1.581704	1.566422	1.552197	1.538914	1.526476
80	1.605172	1.589244	1.574417	1.560571	1.547607
85	1.628066	1.611507	1.596092	1.581698	1.568221
90	1.650431	1.633256	1.617268	1.602339	1.588360
95	1.672308	1.654532	1.637984	1.622531	1.608061
100	1.693732	1.675368	1.658271	1.642306	1.627357

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=53	n=55	n=57	n=59	n=61
7	1.108694	1.106609	1.104638	1.102770	1.100997
8	1.120718	1.118386	1.116183	1.114095	1.112114
9	1.131919	1.129356	1.126934	1.124641	1.122464
10	1.142457	1.139676	1.137047	1.134559	1.132197
11	1.152447	1.149457	1.146632	1.143957	1.141420
12	1.161975	1.158785	1.155771	1.152918	1.150212
13	1.171106	1.167723	1.164527	1.161503	1.158634
14	1.179891	1.176322	1.172951	1.169760	1.166735
15	1.188373	1.184623	1.181082	1.177731	1.174553
16	1.196584	1.192659	1.188953	1.185445	1.182120
17	1.204553	1.200458	1.196590	1.192931	1.189461
18	1.212304	1.208041	1.204017	1.200209	1.196599
19	1.219855	1.215430	1.211252	1.207299	1.203553
20	1.227225	1.222640	1.218312	1.214218	1.210337
21	1.234427	1.229687	1.225211	1.220978	1.216966
22	1.241475	1.236582	1.231962	1.227593	1.223451
23	1.248380	1.243337	1.238575	1.234072	1.229804
24	1.255153	1.249961	1.245060	1.240426	1.236033
25	1.261800	1.256463	1.251426	1.246662	1.242147
26	1.268332	1.262852	1.257680	1.252788	1.248153
27	1.274754	1.269133	1.263828	1.258811	1.254058
28	1.281073	1.275313	1.269877	1.264737	1.259866
29	1.287295	1.281398	1.275833	1.270571	1.265585
30	1.293425	1.287393	1.281701	1.276318	1.271219
31	1.299468	1.293302	1.287485	1.281984	1.276772
32	1.305428	1.299131	1.293189	1.287570	1.282248
33	1.311309	1.304882	1.298817	1.293083	1.287651
34	1.317115	1.310559	1.304373	1.298525	1.292985
35	1.322850	1.316166	1.309861	1.303899	1.298252
36	1.328515	1.321706	1.315282	1.309208	1.303455
37	1.334115	1.327182	1.320640	1.314456	1.308598
38	1.339652	1.332596	1.325938	1.319644	1.313683
39	1.345129	1.337950	1.331178	1.324776	1.318712
40	1.350547	1.343248	1.336362	1.329852	1.323687
41	1.355910	1.348491	1.341492	1.334876	1.328610
42	1.361219	1.353682	1.346571	1.339850	1.333484
43	1.366476	1.358821	1.351600	1.344774	1.338309
44	1.371682	1.363911	1.356581	1.349651	1.343089
45	1.376841	1.368954	1.361515	1.354483	1.347823
45	1.376841	1.368954	1.361515	1.354483	1.347823
50	1.401960	1.393511	1.385542	1.378009	1.370876
55	1.426078	1.417087	1.408608	1.400594	1.393004
60	1.449325	1.439812	1.430840	1.422361	1.414331
65	1.471808	1.461789	1.452340	1.443410	1.434954
70	1.493610	1.483100	1.473188	1.463821	1.454951
75	1.514800	1.503813	1.493450	1.483658	1.474386
80	1.535436	1.523984	1.513184	1.502977	1.493312
85	1.555568	1.543662	1.532434	1.521823	1.511776
90	1.575236	1.562887	1.551241	1.540235	1.529814
95	1.594478	1.581695	1.569640	1.558248	1.547461
100	1.613323	1.600116	1.587661	1.575890	1.564746

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n = 63	n = 65	n = 67	n = 69	n = 71
7	1.099311	1.097706	1.096175	1.094712	1.093313
8	1.110231	1.108437	1.106727	1.105094	1.103532
9	1.120396	1.118426	1.116549	1.114756	1.113041
10	1.129953	1.127817	1.125781	1.123837	1.121978
11	1.139009	1.136714	1.134527	1.132438	1.130442
12	1.147641	1.145194	1.142862	1.140635	1.138507
13	1.155909	1.153316	1.150844	1.148485	1.146231
14	1.163861	1.161126	1.158520	1.156033	1.153656
15	1.171535	1.168663	1.165927	1.163316	1.160820
16	1.178962	1.175957	1.173094	1.170362	1.167752
17	1.186167	1.183032	1.180046	1.177197	1.174474
18	1.193172	1.189911	1.186805	1.183841	1.181009
19	1.199995	1.196611	1.193387	1.190311	1.187373
20	1.206652	1.203147	1.199808	1.196623	1.193581
21	1.213156	1.209533	1.206082	1.202790	1.199645
22	1.219520	1.215780	1.212219	1.208822	1.205577
23	1.225752	1.221899	1.218230	1.214729	1.211386
24	1.231864	1.227899	1.224122	1.220521	1.217080
25	1.237862	1.233787	1.229906	1.226204	1.222669
26	1.243753	1.239570	1.235586	1.231786	1.228158
27	1.249546	1.245255	1.241170	1.237274	1.233553
28	1.255244	1.250848	1.246663	1.242672	1.238860
29	1.260853	1.256354	1.252070	1.247985	1.244084
30	1.266379	1.261778	1.257397	1.253219	1.249229
31	1.271826	1.267123	1.262646	1.258377	1.254300
32	1.277197	1.272395	1.267823	1.263463	1.259300
33	1.282496	1.277596	1.272930	1.268481	1.264232
34	1.287727	1.282729	1.277971	1.273434	1.269101
35	1.292893	1.287798	1.282948	1.278324	1.273909
36	1.297996	1.292807	1.287866	1.283156	1.278658
37	1.303040	1.297756	1.292726	1.287930	1.283351
38	1.308026	1.302649	1.297530	1.292650	1.287990
39	1.312958	1.307488	1.302282	1.297318	1.292579
40	1.317836	1.312276	1.306982	1.301936	1.297117
41	1.322664	1.317013	1.311634	1.306505	1.301608
42	1.327443	1.321702	1.316238	1.311028	1.306054
43	1.332175	1.326346	1.320796	1.315506	1.310455
44	1.336862	1.330944	1.325311	1.319941	1.314814
45	1.341504	1.335499	1.329783	1.324334	1.319132
45	1.341504	1.335499	1.329783	1.324334	1.319132
50	1.364108	1.357677	1.351555	1.345720	1.340150
55	1.385805	1.378963	1.372452	1.366245	1.360321
60	1.406714	1.399477	1.392588	1.386023	1.379756
65	1.426933	1.419312	1.412058	1.405145	1.398547
70	1.446538	1.438544	1.430936	1.423685	1.416765
75	1.465591	1.457234	1.449282	1.441703	1.434470
80	1.484146	1.475436	1.467148	1.459248	1.451710
85	1.502246	1.493192	1.484575	1.476364	1.468527
90	1.519930	1.510539	1.501602	1.493085	1.484957
90	1.537230	1.527509	1.518259	1.509443	1.501030
100	1.554175	1.544131	1.534574	1.525465	1.516773

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n = 73	n = 75	n = 77	n = 79	n = 81
7	1.091773	1.090689	1.089456	1.088271	1.087131
8	1.102037	1.100603	1.099227	1.097905	1.096634
9	1.111400	1.109826	1.108317	1.106866	1.105472
10	1.120199	1.118493	1.116857	1.115285	1.113774
11	1.128531	1.126700	1.124944	1.123256	1.121634
12	1.136471	1.134519	1.132647	1.130849	1.129121
13	1.144073	1.142006	1.140023	1.138118	1.136288
14	1.151382	1.149203	1.147113	1.145106	1.143176
15	1.158433	1.156145	1.153951	1.151845	1.149820
16	1.165254	1.162861	1.160567	1.158364	1.156246
17	1.171870	1.169375	1.166982	1.164685	1.162478
18	1.178300	1.175706	1.173218	1.170829	1.168533
19	1.184562	1.181870	1.179289	1.176811	1.174429
20	1.190670	1.187883	1.185210	1.182644	1.180179
21	1.196637	1.193756	1.190994	1.188342	1.185795
22	1.202473	1.199500	1.196650	1.193915	1.191287
23	1.208188	1.205125	1.202190	1.199372	1.196664
24	1.213790	1.210640	1.207619	1.204720	1.201935
25	1.219288	1.216050	1.212947	1.209968	1.207107
26	1.224687	1.221364	1.218179	1.215122	1.212185
27	1.229994	1.226587	1.223321	1.220187	1.217176
28	1.235215	1.231725	1.228379	1.225169	1.222085
29	1.240353	1.236781	1.233358	1.230072	1.226916
30	1.245414	1.241762	1.238261	1.234901	1.231674
31	1.250401	1.246669	1.243092	1.239660	1.236363
32	1.255319	1.251509	1.247856	1.244352	1.240985
33	1.260171	1.256282	1.252556	1.248980	1.245545
34	1.264959	1.260994	1.257194	1.253548	1.250045
35	1.269687	1.265646	1.261773	1.258058	1.254488
36	1.274358	1.270242	1.266297	1.262512	1.258877
37	1.278973	1.274783	1.270767	1.266914	1.263214
38	1.283536	1.279272	1.275186	1.271266	1.267500
39	1.288048	1.283711	1.279555	1.275568	1.271739
40	1.292511	1.288102	1.283878	1.279824	1.275932
41	1.296928	1.292448	1.288154	1.284036	1.280080
42	1.301299	1.296748	1.292387	1.288204	1.284186
43	1.305627	1.301006	1.296578	1.292330	1.288251
44	1.309913	1.305223	1.300728	1.296417	1.292276
45	1.314159	1.309400	1.304839	1.300465	1.296263
45	1.314159	1.309400	1.304839	1.300465	1.296263
50	1.334826	1.329731	1.324849	1.320166	1.315669
55	1.354658	1.349240	1.344048	1.339068	1.334286
60	1.373767	1.368036	1.362545	1.357278	1.352222
65	1.392241	1.386207	1.380426	1.374882	1.369559
70	1.410152	1.403824	1.397761	1.391947	1.386365
75	1.427557	1.420943	1.414606	1.408530	1.402695
80	1.444505	1.437612	1.431009	1.424676	1.418596
85	1.461038	1.453872	1.447008	1.440425	1.434105
90	1.477189	1.469758	1.462638	1.455811	1.449257
95	1.492990	1.485298	1.477929	1.470862	1.464078
100	1.508466	1.500518	1.492905	1.485604	1.478595

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 83	n = 85	n = 87	n = 89	n = 91
7	1.086034	1.084976	1.083956	1.082971	1.082020
8	1.095410	1.094230	1.093093	1.091995	1.090934
9	1.104129	1.102835	1.101588	1.100384	1.099221
10	1.112319	1.110918	1.109567	1.108263	1.107003
11	1.120073	1.118569	1.117119	1.115719	1.114368
12	1.127458	1.125855	1.124311	1.122820	1.121381
13	1.134526	1.132830	1.131194	1.129616	1.128092
14	1.141320	1.139532	1.137809	1.136146	1.134541
15	1.147872	1.145996	1.144188	1.142443	1.140759
16	1.154209	1.152248	1.150357	1.148533	1.146772
17	1.160354	1.158309	1.156338	1.154437	1.152601
18	1.166325	1.164199	1.162150	1.160173	1.158265
19	1.172138	1.169933	1.167807	1.165757	1.163778
20	1.177808	1.175524	1.173324	1.171202	1.169153
21	1.183344	1.180985	1.178712	1.176519	1.174403
22	1.188759	1.186325	1.183980	1.181718	1.179535
23	1.194060	1.191553	1.189138	1.186809	1.184560
24	1.199256	1.196678	1.194193	1.191797	1.189485
25	1.204354	1.201705	1.199153	1.196691	1.194316
26	1.209361	1.206642	1.204022	1.201497	1.199059
27	1.214280	1.211493	1.208808	1.206219	1.203720
28	1.219119	1.216265	1.213515	1.210863	1.208304
29	1.223881	1.220960	1.218146	1.215433	1.212814
30	1.228571	1.225585	1.222707	1.219933	1.217256
31	1.233192	1.230141	1.227202	1.224368	1.221633
32	1.237748	1.234633	1.231632	1.228739	1.225947
33	1.242243	1.239064	1.236003	1.233051	1.230202
34	1.246678	1.243437	1.240316	1.237306	1.234402
35	1.251057	1.247754	1.244573	1.241507	1.238548
36	1.255382	1.252019	1.248779	1.245656	1.242642
37	1.259656	1.256232	1.252934	1.249755	1.246688
38	1.263880	1.260397	1.257042	1.253807	1.250686
39	1.268058	1.264515	1.261103	1.257813	1.254640
40	1.272189	1.268588	1.265120	1.261776	1.258550
41	1.276278	1.272618	1.269094	1.265697	1.262419
42	1.280324	1.276607	1.273028	1.269577	1.266248
43	1.284329	1.280556	1.276921	1.273418	1.270038
44	1.288296	1.284466	1.280777	1.277222	1.273791
45	1.292225	1.288339	1.284596	1.280989	1.277508
45	1.292225	1.288339	1.284596	1.280989	1.277508
50	1.311346	1.307187	1.303182	1.299322	1.295598
55	1.329690	1.325269	1.321010	1.316906	1.312948
60	1.347362	1.342686	1.338183	1.333844	1.329658
65	1.364443	1.359521	1.354782	1.350214	1.345808
70	1.381000	1.375839	1.370870	1.366081	1.361462
75	1.397088	1.391695	1.386502	1.381497	1.376670
80	1.412753	1.407132	1.401721	1.396506	1.391476
85	1.428032	1.422190	1.416565	1.411144	1.405917
90	1.442958	1.436899	1.431066	1.425444	1.420023
95	1.457559	1.451288	1.445251	1.439433	1.433822
100	1.471860	1.465381	1.459143	1.453133	1.447336

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=93	n=95	n=97	n=99	n=101
7	1.081100	1.080210	1.079348	1.078514	1.077704
8	1.089909	1.088917	1.087956	1.087026	1.086124
9	1.098097	1.097010	1.095957	1.094937	1.093949
10	1.105786	1.104608	1.103468	1.102364	1.101294
11	1.113062	1.111799	1.110576	1.109392	1.108244
12	1.119990	1.118645	1.117343	1.116082	1.114860
13	1.126620	1.125195	1.123817	1.122482	1.121189
14	1.132990	1.131489	1.130038	1.128632	1.127269
15	1.139131	1.137558	1.136035	1.134560	1.133131
16	1.145070	1.143425	1.141833	1.140292	1.138798
17	1.150828	1.149113	1.147454	1.145847	1.144291
18	1.156421	1.154639	1.152914	1.151244	1.149627
19	1.161866	1.160017	1.158229	1.156497	1.154820
20	1.167174	1.165261	1.163410	1.161618	1.159882
21	1.172358	1.170382	1.168470	1.166618	1.164825
22	1.177427	1.175388	1.173416	1.171507	1.169657
23	1.182388	1.180289	1.178258	1.176292	1.174387
24	1.187251	1.185092	1.183003	1.180981	1.179022
25	1.192021	1.189803	1.187657	1.185580	1.183569
26	1.196704	1.194428	1.192227	1.190096	1.188032
27	1.201306	1.198974	1.196717	1.194533	1.192417
28	1.205832	1.203443	1.201132	1.198896	1.196730
29	1.210286	1.207841	1.205477	1.203189	1.200972
30	1.214671	1.212172	1.209755	1.207416	1.205150
31	1.218991	1.216439	1.213970	1.211580	1.209266
32	1.223251	1.220645	1.218125	1.215685	1.213323
33	1.227452	1.224793	1.222222	1.219734	1.217324
34	1.231597	1.228887	1.226266	1.223729	1.221272
35	1.235690	1.232928	1.230258	1.227673	1.225170
36	1.239732	1.236920	1.234200	1.231568	1.229019
37	1.243725	1.240863	1.238094	1.235416	1.232821
38	1.247672	1.244760	1.241944	1.239218	1.236579
39	1.251575	1.248614	1.245750	1.242978	1.240295
40	1.255435	1.252425	1.249514	1.246697	1.243970
41	1.259254	1.256196	1.253238	1.250376	1.247605
42	1.263033	1.259927	1.256923	1.254017	1.251202
43	1.266774	1.263621	1.260572	1.257621	1.254764
44	1.270479	1.267278	1.264184	1.261189	1.258290
45	1.274148	1.270901	1.267761	1.264723	1.261782
45	1.274148	1.270901	1.267761	1.264723	1.261782
50	1.292002	1.288528	1.285169	1.281919	1.278772
55	1.309125	1.305433	1.301863	1.298408	1.295064
60	1.325617	1.321713	1.317939	1.314288	1.310752
65	1.341555	1.337447	1.333475	1.329632	1.325912
70	1.357003	1.352695	1.348531	1.344502	1.340602
75	1.372010	1.367509	1.363158	1.358948	1.354873
80	1.386621	1.381931	1.377397	1.373011	1.368755
85	1.400871	1.395996	1.391284	1.386726	1.382314
90	1.414790	1.409735	1.404849	1.400122	1.395547
95	1.428406	1.423174	1.418117	1.413226	1.408490
100	1.441741	1.436336	1.431112	1.426058	1.421157

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 103	n = 105	n = 107	n = 109	n = 111
7	1.076919	1.076156	1.075416	1.074697	1.073997
8	1.085249	1.084400	1.083575	1.082774	1.081995
9	1.092990	1.092059	1.091156	1.090278	1.089424
10	1.100256	1.099249	1.098271	1.097321	1.096397
11	1.107131	1.106051	1.105002	1.103983	1.102992
12	1.113674	1.112524	1.111408	1.110323	1.109269
13	1.119935	1.118718	1.117536	1.116388	1.115273
14	1.125948	1.124667	1.123422	1.122214	1.121039
15	1.131745	1.130401	1.129096	1.127829	1.126597
16	1.137350	1.135945	1.134581	1.133256	1.131969
17	1.142782	1.141318	1.139897	1.138517	1.137176
18	1.148058	1.146537	1.145060	1.143626	1.142232
19	1.153193	1.151616	1.150084	1.148597	1.147152
20	1.158199	1.156567	1.154982	1.153443	1.151948
21	1.163086	1.161400	1.159764	1.158174	1.156630
22	1.167864	1.166126	1.164438	1.162799	1.161207
23	1.172541	1.170751	1.169013	1.167326	1.165686
24	1.177124	1.175283	1.173496	1.171761	1.170075
25	1.181619	1.179728	1.177892	1.176110	1.174379
26	1.186031	1.184091	1.182208	1.180380	1.178604
27	1.190367	1.188378	1.186449	1.184575	1.182755
28	1.194630	1.192594	1.190618	1.188700	1.186836
29	1.198824	1.196741	1.194720	1.192758	1.190851
30	1.202954	1.200825	1.198759	1.196753	1.194804
31	1.207023	1.204848	1.202738	1.200689	1.198698
32	1.211034	1.208814	1.206660	1.204568	1.202537
33	1.214989	1.212724	1.210527	1.208394	1.206322
34	1.218892	1.216583	1.214343	1.212169	1.210056
35	1.222744	1.220392	1.218110	1.215894	1.213743
36	1.226548	1.224153	1.221830	1.219574	1.217383
37	1.230307	1.227870	1.225504	1.223209	1.220979
38	1.234022	1.231542	1.229136	1.226801	1.224532
39	1.237694	1.235173	1.232727	1.230352	1.228046
40	1.241326	1.238764	1.236277	1.233864	1.231520
41	1.244920	1.242316	1.239790	1.237338	1.234957
42	1.248475	1.245831	1.243266	1.240776	1.238358
43	1.251995	1.249311	1.246707	1.244179	1.241724
44	1.255480	1.252756	1.250113	1.247548	1.245057
45	1.258931	1.256168	1.253487	1.250885	1.248358
45	1.258931	1.256168	1.253487	1.250885	1.248358
50	1.275723	1.272767	1.269900	1.267117	1.264414
55	1.291824	1.288683	1.285636	1.282679	1.279807
60	1.307327	1.304007	1.300787	1.297662	1.294627
65	1.322308	1.318814	1.315426	1.312137	1.308944
70	1.336824	1.333162	1.329610	1.326163	1.322816
75	1.350926	1.347099	1.343388	1.339787	1.336291
80	1.364653	1.360666	1.356800	1.353049	1.349406
85	1.378039	1.373897	1.369879	1.365980	1.362195
90	1.391115	1.386819	1.382653	1.378611	1.374686
95	1.403904	1.399459	1.395148	1.390964	1.386903
100	1.416429	1.411836	1.407383	1.403062	1.398866

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 113	n = 115	n = 117	n = 119	n = 121
7	1.073316	1.072654	1.072009	1.071381	1.070769
8	1.081237	1.080499	1.079781	1.079082	1.078400
9	1.088594	1.087786	1.087000	1.086234	1.085488
10	1.095499	1.094625	1.093774	1.092945	1.092137
11	1.102029	1.101092	1.100180	1.099291	1.098426
12	1.108244	1.107247	1.106276	1.105330	1.104409
13	1.114188	1.113133	1.112106	1.111106	1.110131
14	1.119897	1.118786	1.117705	1.116652	1.115626
15	1.125399	1.124234	1.123100	1.121996	1.120920
16	1.130718	1.129500	1.128315	1.127162	1.126038
17	1.135872	1.134603	1.133369	1.132167	1.130996
18	1.140877	1.139559	1.138276	1.137028	1.135811
19	1.145748	1.144381	1.143051	1.141757	1.140496
20	1.150495	1.149081	1.147706	1.146366	1.145062
21	1.155129	1.153669	1.152248	1.150865	1.149518
22	1.159659	1.158154	1.156689	1.155263	1.153874
23	1.164093	1.162543	1.161035	1.159566	1.158136
24	1.168436	1.166843	1.165292	1.163782	1.162312
25	1.172696	1.171060	1.169467	1.167917	1.166407
26	1.176878	1.175199	1.173565	1.171975	1.170427
27	1.180986	1.179265	1.177591	1.175962	1.174375
28	1.185025	1.183263	1.181550	1.179881	1.178257
29	1.188998	1.187197	1.185444	1.183737	1.182075
30	1.192910	1.191069	1.189277	1.187533	1.185834
31	1.196764	1.194883	1.193053	1.191272	1.189537
32	1.200562	1.198643	1.196775	1.194957	1.193187
33	1.204308	1.202350	1.200445	1.198591	1.196785
34	1.208004	1.206008	1.204066	1.202176	1.200335
35	1.211651	1.209618	1.207640	1.205714	1.203839
36	1.215253	1.213183	1.211168	1.209208	1.207299
37	1.218812	1.216704	1.214655	1.212660	1.210717
38	1.222328	1.220185	1.218100	1.216070	1.214094
39	1.225804	1.223625	1.221505	1.219442	1.217433
40	1.229242	1.227027	1.224873	1.222776	1.220735
41	1.232643	1.230393	1.228204	1.226074	1.224000
42	1.236008	1.233723	1.231501	1.229338	1.227232
43	1.239339	1.237019	1.234763	1.232568	1.230430
44	1.242636	1.240283	1.237994	1.235766	1.233596
45	1.245902	1.243515	1.241192	1.238932	1.236732
45	1.245902	1.243515	1.241192	1.238932	1.236732
50	1.261788	1.259235	1.256752	1.254336	1.251983
55	1.277017	1.274305	1.271667	1.269100	1.266601
60	1.291678	1.288812	1.286024	1.283311	1.280671
65	1.305842	1.302826	1.299893	1.297040	1.294262
70	1.319565	1.316404	1.313330	1.310340	1.307428
75	1.332894	1.329592	1.326381	1.323257	1.320216
80	1.345867	1.342428	1.339083	1.335829	1.332661
85	1.358518	1.354944	1.351468	1.348087	1.344795
90	1.370873	1.367168	1.363564	1.360058	1.356646
95	1.382957	1.379123	1.375394	1.371766	1.368235
100	1.394791	1.390829	1.386978	1.383230	1.379583

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n=123	n=125	n=127	n=129	n=131
7	1.070172	1.069589	1.069021	1.068466	1.067924
8	1.077735	1.077087	1.076455	1.075837	1.075234
9	1.084760	1.084050	1.083358	1.082682	1.082022
10	1.091350	1.090582	1.089833	1.089102	1.088388
11	1.097582	1.096759	1.095956	1.095172	1.094408
12	1.103511	1.102636	1.101781	1.100948	1.100134
13	1.109181	1.108255	1.107351	1.106470	1.105609
14	1.114626	1.113651	1.112700	1.111771	1.110865
15	1.119872	1.118850	1.117853	1.116880	1.115930
16	1.124942	1.123874	1.122833	1.121816	1.120824
17	1.129855	1.128743	1.127658	1.126599	1.125565
18	1.134626	1.133470	1.132342	1.131243	1.130169
19	1.139267	1.138069	1.136900	1.135760	1.134648
20	1.143790	1.142551	1.141342	1.140163	1.139012
21	1.148205	1.146925	1.145677	1.144460	1.143271
22	1.152520	1.151201	1.149914	1.148659	1.147434
23	1.156743	1.155385	1.154060	1.152768	1.151507
24	1.160880	1.159483	1.158122	1.156793	1.155497
25	1.164936	1.163502	1.162104	1.160740	1.159409
26	1.168918	1.167447	1.166013	1.164614	1.163248
27	1.172829	1.171322	1.169852	1.168419	1.167020
28	1.176674	1.175131	1.173627	1.172159	1.170727
29	1.180456	1.178878	1.177340	1.175839	1.174374
30	1.184180	1.182567	1.180994	1.179460	1.177964
31	1.187848	1.186200	1.184594	1.183028	1.181499
32	1.191462	1.189781	1.188142	1.186544	1.184984
33	1.195026	1.193312	1.191640	1.190010	1.188419
34	1.198543	1.196795	1.195092	1.193430	1.191808
35	1.202013	1.200233	1.198498	1.196805	1.195153
36	1.205440	1.203628	1.201861	1.200137	1.198456
37	1.208825	1.206981	1.205183	1.203429	1.201718
38	1.212170	1.210294	1.208465	1.206681	1.204941
39	1.215476	1.213569	1.211710	1.209897	1.208127
40	1.218746	1.216808	1.214919	1.213076	1.211278
41	1.221980	1.220012	1.218092	1.216220	1.214394
42	1.225180	1.223182	1.221233	1.219332	1.217477
43	1.228348	1.226319	1.224341	1.222411	1.220529
44	1.231484	1.229425	1.227417	1.225460	1.223550
45	1.234589	1.232500	1.230464	1.228479	1.226541
45	1.234589	1.232500	1.230464	1.228479	1.226541
50	1.249692	1.247459	1.245282	1.243160	1.241089
55	1.264167	1.261795	1.259483	1.257229	1.255029
60	1.278099	1.275593	1.273151	1.270769	1.268445
65	1.291556	1.288921	1.286351	1.283846	1.281402
70	1.304593	1.301831	1.299139	1.296514	1.293953
75	1.317254	1.314369	1.311557	1.308815	1.306140
80	1.329576	1.326571	1.323642	1.320786	1.318000
85	1.341590	1.338468	1.335424	1.332457	1.329563
90	1.353323	1.350086	1.346931	1.343854	1.340854
95	1.364797	1.361447	1.358183	1.355000	1.351895
100	1.376032	1.372572	1.369200	1.365913	1.362706

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=133	n=135	n=137	n=139	n=141
7	1.067395	1.066878	1.066372	1.065878	1.065394
8	1.074645	1.074070	1.073507	1.072957	1.072419
9	1.081377	1.080747	1.080131	1.079529	1.078940
10	1.087691	1.087010	1.086344	1.085693	1.085056
11	1.093660	1.092930	1.092217	1.091519	1.090837
12	1.099339	1.098562	1.097803	1.097061	1.096335
13	1.104768	1.103947	1.103144	1.102359	1.101592
14	1.109980	1.109116	1.108271	1.107445	1.106638
15	1.115002	1.114096	1.113211	1.112345	1.111499
16	1.119855	1.118908	1.117984	1.117079	1.116195
17	1.124556	1.123570	1.122607	1.121665	1.120745
18	1.129121	1.128097	1.127096	1.126118	1.125161
19	1.133561	1.132500	1.131462	1.130449	1.129458
20	1.137888	1.136790	1.135717	1.134669	1.133644
21	1.142111	1.140977	1.139870	1.138787	1.137729
22	1.146237	1.145069	1.143927	1.142812	1.141721
23	1.150275	1.149073	1.147898	1.146749	1.145626
24	1.154231	1.152994	1.151786	1.150606	1.149452
25	1.158109	1.156840	1.155599	1.154387	1.153202
26	1.161915	1.160613	1.159341	1.158098	1.156883
27	1.165654	1.164320	1.163017	1.161743	1.160498
28	1.169329	1.167963	1.166629	1.165326	1.164051
29	1.172944	1.171547	1.170183	1.168850	1.167546
30	1.176502	1.175075	1.173681	1.172318	1.170986
31	1.180007	1.178550	1.177126	1.175734	1.174374
32	1.183461	1.181974	1.180521	1.179101	1.177713
33	1.186866	1.185349	1.183868	1.182420	1.181005
34	1.190225	1.188680	1.187170	1.185694	1.184252
35	1.193541	1.191966	1.190428	1.188925	1.187456
36	1.196814	1.195211	1.193645	1.192115	1.190620
37	1.200047	1.198416	1.196823	1.195266	1.193744
38	1.203242	1.201583	1.199963	1.198379	1.196832
39	1.206400	1.204714	1.203066	1.201456	1.199883
40	1.209523	1.207809	1.206135	1.204499	1.202900
41	1.212611	1.210870	1.209170	1.207509	1.205885
42	1.215667	1.213900	1.212173	1.210486	1.208837
43	1.218692	1.216898	1.215145	1.213433	1.211759
44	1.221686	1.219865	1.218087	1.216350	1.214652
45	1.224650	1.222804	1.221000	1.219238	1.217516
45	1.224650	1.222804	1.221000	1.219238	1.217516
50	1.239068	1.237094	1.235167	1.233284	1.231443
55	1.252883	1.250787	1.248740	1.246741	1.244786
60	1.266178	1.263964	1.261802	1.259689	1.257625
65	1.279017	1.276689	1.274415	1.272194	1.270022
70	1.291454	1.289014	1.286632	1.284304	1.282030
75	1.303530	1.300982	1.298494	1.296063	1.293688
80	1.315282	1.312628	1.310037	1.307505	1.305032
85	1.326738	1.323982	1.321289	1.318660	1.316090
90	1.337926	1.335068	1.332277	1.329551	1.326887
95	1.348866	1.345909	1.343022	1.340201	1.337445
100	1.359578	1.356524	1.353542	1.350629	1.347782

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 143	n = 145	n = 147	n = 149	n = 151
7	1.064921	1.064458	1.064004	1.063560	1.063124
8	1.071892	1.071377	1.070872	1.070378	1.069894
9	1.078364	1.077800	1.077248	1.076707	1.076177
10	1.084433	1.083823	1.083226	1.082642	1.082069
11	1.090169	1.089516	1.088876	1.088250	1.087637
12	1.095625	1.094930	1.094250	1.093584	1.092932
13	1.100841	1.100106	1.099387	1.098683	1.097993
14	1.105848	1.105074	1.104318	1.103577	1.102851
15	1.110670	1.109860	1.109067	1.108290	1.107530
16	1.115330	1.114484	1.113656	1.112845	1.112050
17	1.119844	1.118963	1.118100	1.117256	1.116428
18	1.124226	1.123310	1.122415	1.121538	1.120678
19	1.128488	1.127540	1.126611	1.125702	1.124812
20	1.132641	1.131660	1.130700	1.129760	1.128839
21	1.136694	1.135681	1.134689	1.133719	1.132769
22	1.140654	1.139610	1.138588	1.137588	1.136608
23	1.144528	1.143454	1.142402	1.141373	1.140365
24	1.148323	1.147218	1.146138	1.145080	1.144044
25	1.152043	1.150909	1.149800	1.148714	1.147650
26	1.155694	1.154532	1.153394	1.152280	1.151189
27	1.159280	1.158089	1.156923	1.155782	1.154665
28	1.162805	1.161585	1.160392	1.159224	1.158081
29	1.166272	1.165025	1.163804	1.162610	1.161441
30	1.169684	1.168410	1.167163	1.165942	1.164747
31	1.173044	1.171743	1.170470	1.169224	1.168004
32	1.176356	1.175028	1.173729	1.172458	1.171213
33	1.179621	1.178267	1.176942	1.175646	1.174376
34	1.182841	1.181461	1.180111	1.178790	1.177496
35	1.186019	1.184614	1.183239	1.181893	1.180576
36	1.189157	1.187726	1.186327	1.184957	1.183615
37	1.192256	1.190800	1.189376	1.187982	1.186618
38	1.195318	1.193838	1.192389	1.190972	1.189584
39	1.198345	1.196840	1.195367	1.193926	1.192516
40	1.201337	1.199808	1.198312	1.196848	1.195414
41	1.204297	1.202744	1.201224	1.199737	1.198281
42	1.207225	1.205648	1.204105	1.202595	1.201117
43	1.210123	1.208522	1.206957	1.205424	1.203924
44	1.212992	1.211368	1.209779	1.208224	1.206702
45	1.215832	1.214185	1.212574	1.210997	1.209453
45	1.215832	1.214185	1.212574	1.210997	1.209453
50	1.229644	1.227884	1.226162	1.224477	1.222828
55	1.242876	1.241007	1.239179	1.237390	1.235639
60	1.255607	1.253633	1.251702	1.249813	1.247964
65	1.267900	1.265825	1.263794	1.261808	1.259863
70	1.279806	1.277632	1.275505	1.273424	1.271387
75	1.291366	1.289095	1.286874	1.284701	1.282574
80	1.302613	1.300249	1.297936	1.295673	1.293458
85	1.313578	1.311121	1.308719	1.306368	1.304067
90	1.324283	1.321737	1.319247	1.316810	1.314425
95	1.334751	1.332117	1.329541	1.327020	1.324553
100	1.345000	1.342280	1.339619	1.337016	1.334468

TABLE OF $[\log_e F(\frac{1}{2}n, \frac{1}{2}; x)]/\sqrt{2nx}$

x	n = 153	n = 155	n = 157	n = 159	n = 161
7	1.062698	1.062280	1.061870	1.061467	1.061073
8	1.069420	1.068955	1.068499	1.068052	1.067613
9	1.075658	1.075150	1.074651	1.074162	1.073682
10	1.081508	1.080958	1.080419	1.079890	1.079372
11	1.087036	1.086447	1.085869	1.085303	1.084748
12	1.092293	1.091666	1.091052	1.090450	1.089860
13	1.097317	1.096655	1.096006	1.095369	1.094745
14	1.102140	1.101443	1.100760	1.100090	1.099434
15	1.106785	1.106055	1.105339	1.104637	1.103949
16	1.111272	1.110510	1.109762	1.109030	1.108311
17	1.115618	1.114824	1.114046	1.113283	1.112535
18	1.119837	1.119013	1.118204	1.117412	1.116635
19	1.123940	1.123086	1.122248	1.121428	1.120623
20	1.127938	1.127054	1.126188	1.125339	1.124507
21	1.131838	1.130926	1.130032	1.129156	1.128297
22	1.135649	1.134709	1.133788	1.132885	1.132000
23	1.139377	1.138410	1.137462	1.136533	1.135622
24	1.143029	1.142035	1.141060	1.140105	1.139169
25	1.146608	1.145588	1.144588	1.143607	1.142646
26	1.150121	1.149074	1.148049	1.147044	1.146058
27	1.153570	1.152498	1.151448	1.150418	1.149408
28	1.156961	1.155864	1.154788	1.153734	1.152701
29	1.160295	1.159173	1.158074	1.156996	1.155940
30	1.163577	1.162431	1.161307	1.160206	1.159126
31	1.166809	1.165638	1.164491	1.163367	1.162265
32	1.169994	1.168799	1.167629	1.166482	1.165357
33	1.173133	1.171915	1.170722	1.169552	1.168405
34	1.176230	1.174988	1.173772	1.172580	1.171412
35	1.179285	1.178021	1.176783	1.175569	1.174379
36	1.182302	1.181015	1.179754	1.178519	1.177307
37	1.185281	1.183972	1.182689	1.181432	1.180200
38	1.188225	1.186893	1.185589	1.184310	1.183057
39	1.191134	1.189781	1.188455	1.187155	1.185881
40	1.194010	1.192636	1.191288	1.189968	1.188674
41	1.196855	1.195459	1.194090	1.192749	1.191435
42	1.199670	1.198252	1.196863	1.195501	1.194167
43	1.202455	1.201016	1.199606	1.198224	1.196870
44	1.205212	1.203752	1.202322	1.200920	1.199546
45	1.207941	1.206461	1.205010	1.203588	1.202195
45	1.207941	1.206461	1.205010	1.203588	1.202195
50	1.221213	1.219631	1.218081	1.216562	1.215074
55	1.233924	1.232245	1.230600	1.228988	1.227408
60	1.246153	1.244380	1.242642	1.240940	1.239271
65	1.257960	1.256095	1.254268	1.252479	1.250724
70	1.269392	1.267439	1.265526	1.263651	1.261814
75	1.280491	1.278452	1.276454	1.274497	1.272578
80	1.291290	1.289166	1.287086	1.285048	1.283050
85	1.301815	1.299609	1.297448	1.295332	1.293257
90	1.312091	1.309805	1.307565	1.305371	1.303221
95	1.322138	1.319773	1.317456	1.315187	1.312963
100	1.331974	1.329532	1.327140	1.324796	1.322499

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n= 163	n=165	n= 167	n= 169	n= 171
7	1.060686	1.060306	1.059933	1.059567	1.059208
8	1.067183	1.066760	1.066346	1.065939	1.065539
9	1.073211	1.072749	1.072296	1.071851	1.071414
10	1.078863	1.078364	1.077874	1.077393	1.076920
11	1.084203	1.083668	1.083144	1.082628	1.082123
12	1.089280	1.088712	1.088154	1.087606	1.087069
13	1.094133	1.093532	1.092942	1.092363	1.091795
14	1.098790	1.098158	1.097537	1.096928	1.096330
15	1.103274	1.102612	1.101962	1.101324	1.100698
16	1.107606	1.106915	1.106236	1.105570	1.104916
17	1.111802	1.111082	1.110375	1.109682	1.109001
18	1.115873	1.115126	1.114392	1.113672	1.112965
19	1.119833	1.119059	1.118298	1.117552	1.116820
20	1.123691	1.122890	1.122104	1.121332	1.120575
21	1.127454	1.126628	1.125816	1.125020	1.124238
22	1.131131	1.130279	1.129443	1.128623	1.127817
23	1.134728	1.133851	1.132991	1.132147	1.131318
24	1.138250	1.137349	1.136465	1.135598	1.134746
25	1.141703	1.140778	1.139871	1.138980	1.138106
26	1.145091	1.144143	1.143212	1.142299	1.141403
27	1.148418	1.147447	1.146494	1.145558	1.144640
28	1.151688	1.150694	1.149718	1.148761	1.147822
29	1.154903	1.153887	1.152890	1.151911	1.150950
30	1.158068	1.157029	1.156010	1.155010	1.154029
31	1.161184	1.160124	1.159083	1.158062	1.157060
32	1.164254	1.163172	1.162111	1.161070	1.160047
33	1.167281	1.166178	1.165096	1.164034	1.162991
34	1.170266	1.169142	1.168039	1.166957	1.165895
35	1.173212	1.172067	1.170944	1.169842	1.168760
36	1.176120	1.174954	1.173811	1.172690	1.171589
37	1.178991	1.177806	1.176643	1.175502	1.174382
38	1.181828	1.180623	1.179440	1.178280	1.177141
39	1.184632	1.183407	1.182205	1.181026	1.179868
40	1.187404	1.186159	1.184938	1.183740	1.182564
41	1.190146	1.188882	1.187641	1.186424	1.185230
42	1.192858	1.191574	1.190315	1.189080	1.187867
43	1.195542	1.194239	1.192961	1.191707	1.190477
44	1.198198	1.196877	1.195580	1.194308	1.193060
45	1.200828	1.199488	1.198173	1.196883	1.195617
45	1.200828	1.199488	1.198173	1.196883	1.195617
50	1.213614	1.212182	1.210778	1.209400	1.208048
55	1.225858	1.224339	1.222848	1.221386	1.219951
60	1.237636	1.236031	1.234458	1.232914	1.231398
65	1.249004	1.247318	1.245664	1.244041	1.242448
70	1.260012	1.258246	1.256513	1.254813	1.253145
75	1.270698	1.268853	1.267044	1.265270	1.263528
80	1.281092	1.279172	1.277288	1.275441	1.273628
85	1.291223	1.289228	1.287272	1.285354	1.283471
90	1.301113	1.299046	1.297019	1.295030	1.293079
95	1.310782	1.308644	1.306547	1.304490	1.302472
100	1.320247	1.318040	1.315875	1.313751	1.311667

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n=173	n=175	n=177	n=179	n=181
7	1.058854	1.058507	1.058166	1.057831	1.057502
8	1.065147	1.064761	1.064382	1.064009	1.063643
9	1.070984	1.070563	1.070148	1.069741	1.069340
10	1.076456	1.076000	1.075553	1.075113	1.074680
11	1.081626	1.081138	1.080658	1.080187	1.079724
12	1.086541	1.086022	1.085512	1.085011	1.084519
13	1.091237	1.090688	1.090150	1.089620	1.089100
14	1.095743	1.095166	1.094600	1.094043	1.093496
15	1.100082	1.099478	1.098885	1.098301	1.097728
16	1.104274	1.103643	1.103023	1.102414	1.101816
17	1.108332	1.107675	1.107030	1.106396	1.105773
18	1.112271	1.111589	1.110919	1.110261	1.109614
19	1.116101	1.115394	1.114700	1.114018	1.113348
20	1.119831	1.119101	1.118384	1.117679	1.116986
21	1.123471	1.122717	1.121977	1.121249	1.120534
22	1.127026	1.126250	1.125487	1.124737	1.124000
23	1.130504	1.129705	1.128920	1.128149	1.127390
24	1.133910	1.133088	1.132282	1.131489	1.130710
25	1.137248	1.136405	1.135577	1.134763	1.133964
26	1.140523	1.139658	1.138810	1.137975	1.137156
27	1.143739	1.142853	1.141984	1.141130	1.140290
28	1.146899	1.145993	1.145103	1.144229	1.143370
29	1.150007	1.149080	1.148171	1.147277	1.146398
30	1.153065	1.152119	1.151189	1.150276	1.149379
31	1.156076	1.155111	1.154161	1.153229	1.152313
32	1.159043	1.158058	1.157090	1.156139	1.155204
33	1.161968	1.160963	1.159976	1.159006	1.158054
34	1.164852	1.163828	1.162823	1.161835	1.160864
35	1.167698	1.166656	1.165631	1.164625	1.163637
36	1.170508	1.169446	1.168404	1.167380	1.166374
37	1.173282	1.172202	1.171142	1.170100	1.169076
38	1.176023	1.174925	1.173846	1.172787	1.171746
39	1.178731	1.177615	1.176519	1.175443	1.174385
40	1.181409	1.180275	1.179162	1.178068	1.176993
41	1.184057	1.182906	1.181775	1.180664	1.179573
42	1.186677	1.185508	1.184360	1.183232	1.182124
43	1.189269	1.188082	1.186918	1.185773	1.184649
44	1.191834	1.190631	1.189449	1.188288	1.187148
45	1.194374	1.193154	1.191955	1.190778	1.189622
45	1.194374	1.193154	1.191955	1.190778	1.189622
50	1.206721	1.205417	1.204138	1.202880	1.201645
55	1.218542	1.217159	1.215801	1.214467	1.213156
60	1.229911	1.228451	1.227017	1.225609	1.224226
65	1.240885	1.239350	1.237843	1.236363	1.234909
70	1.251508	1.249901	1.248323	1.246772	1.245250
75	1.261819	1.260141	1.258494	1.256876	1.255286
80	1.271849	1.270102	1.268387	1.266702	1.265048
85	1.281623	1.279809	1.278028	1.276278	1.274560
90	1.291164	1.289284	1.287438	1.285625	1.283845
95	1.300491	1.298547	1.296638	1.294763	1.292921
100	1.309621	1.307614	1.305642	1.303706	1.301805

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

x	n = 183	n = 185	n = 187	n = 189	n = 191
7	1.057177	1.056859	1.056545	1.056237	1.055934
8	1.063283	1.062929	1.062581	1.062238	1.061901
9	1.068947	1.068560	1.068179	1.067804	1.067436
10	1.074254	1.073836	1.073425	1.073020	1.072622
11	1.079268	1.078821	1.078380	1.077947	1.077521
12	1.084035	1.083559	1.083091	1.082630	1.082177
13	1.088588	1.088085	1.087591	1.087104	1.086625
14	1.092958	1.092428	1.091908	1.091396	1.090893
15	1.097164	1.096610	1.096065	1.095529	1.095002
16	1.101227	1.100649	1.100080	1.099520	1.098970
17	1.105161	1.104559	1.103966	1.103384	1.102811
18	1.108978	1.108353	1.107738	1.107134	1.106539
19	1.112690	1.112042	1.111405	1.110779	1.110163
20	1.116305	1.115635	1.114977	1.114329	1.113692
21	1.119831	1.119140	1.118461	1.117793	1.117136
22	1.123276	1.122564	1.121864	1.121176	1.120499
23	1.126645	1.125913	1.125193	1.124484	1.123788
24	1.129944	1.129192	1.128452	1.127724	1.127008
25	1.133178	1.132405	1.131646	1.130899	1.130164
26	1.136350	1.135558	1.134780	1.134014	1.133260
27	1.139465	1.138654	1.137856	1.137072	1.136300
28	1.142526	1.141696	1.140880	1.140077	1.139288
29	1.145535	1.144687	1.143852	1.143032	1.142225
30	1.148497	1.147630	1.146778	1.145940	1.145115
31	1.151413	1.150528	1.149658	1.148802	1.147961
32	1.154286	1.153383	1.152495	1.151622	1.150764
33	1.157117	1.156197	1.155292	1.154402	1.153527
34	1.159910	1.158972	1.158050	1.157144	1.156252
35	1.162665	1.161710	1.160771	1.159848	1.158940
36	1.165385	1.164413	1.163457	1.162518	1.161594
37	1.168070	1.167082	1.166110	1.165154	1.164214
38	1.170724	1.169718	1.168730	1.167758	1.166802
39	1.173345	1.172324	1.171319	1.170331	1.169360
40	1.175937	1.174899	1.173878	1.172875	1.171888
41	1.178500	1.177446	1.176410	1.175390	1.174388
42	1.181035	1.179965	1.178913	1.177879	1.176861
43	1.183544	1.182458	1.181390	1.180341	1.179308
44	1.186027	1.184925	1.183842	1.182777	1.181730
45	1.188485	1.187368	1.186270	1.185190	1.184128
45	1.188485	1.187368	1.186270	1.185190	1.184128
50	1.200432	1.199239	1.198066	1.196913	1.195779
55	1.211869	1.210603	1.209359	1.208136	1.206933
60	1.222866	1.221530	1.220217	1.218926	1.217656
65	1.233480	1.232076	1.230696	1.229339	1.228004
70	1.243754	1.242283	1.240838	1.239417	1.238020
75	1.253724	1.252190	1.250681	1.249198	1.247740
80	1.263422	1.261824	1.260254	1.258710	1.257192
85	1.272872	1.271213	1.269582	1.267979	1.266403
90	1.282095	1.280376	1.278687	1.277026	1.275393
95	1.291112	1.289334	1.287586	1.285869	1.284180
100	1.299937	1.298101	1.296297	1.294524	1.292780

TABLE OF $\left[\log_e F\left(\frac{1}{2}n, \frac{1}{2}; x\right) \right] / \sqrt{2nx}$

X	n = 193	n = 195	n = 197	n = 199	n = 201
7	1.055635	1.055341	1.055052	1.054767	1.054486
8	1.061569	1.061242	1.060921	1.060604	1.060293
9	1.067073	1.066716	1.066364	1.066018	1.065678
10	1.072230	1.071845	1.071465	1.071091	1.070723
11	1.077101	1.076689	1.076282	1.075882	1.075488
12	1.081731	1.081293	1.080861	1.080436	1.080017
13	1.086154	1.085691	1.085235	1.084785	1.084343
14	1.090398	1.089910	1.089430	1.088958	1.088493
15	1.094483	1.093972	1.093470	1.092975	1.092488
16	1.098428	1.097895	1.097370	1.096854	1.096346
17	1.102248	1.101693	1.101147	1.100609	1.100080
18	1.105954	1.105378	1.104811	1.104253	1.103704
19	1.109557	1.108960	1.108373	1.107795	1.107226
20	1.113066	1.112449	1.111842	1.111245	1.110657
21	1.116489	1.115853	1.115226	1.114610	1.114003
22	1.119832	1.119177	1.118532	1.117897	1.117271
23	1.123102	1.122428	1.121764	1.121111	1.120468
24	1.126304	1.125611	1.124929	1.124258	1.123597
25	1.129441	1.128730	1.128030	1.127342	1.126663
26	1.132520	1.131790	1.131073	1.130367	1.129672
27	1.135542	1.134795	1.134060	1.133337	1.132625
28	1.138511	1.137747	1.136995	1.136255	1.135527
29	1.141431	1.140650	1.139881	1.139125	1.138380
30	1.144304	1.143506	1.142721	1.141948	1.141188
31	1.147133	1.146318	1.145517	1.144728	1.143952
32	1.149920	1.149089	1.148271	1.147466	1.146674
33	1.152666	1.151819	1.150986	1.150165	1.149358
34	1.155375	1.154512	1.153662	1.152827	1.152004
35	1.158047	1.157168	1.156304	1.155452	1.154615
36	1.160685	1.159790	1.158910	1.158044	1.157192
37	1.163289	1.162379	1.161484	1.160603	1.159736
38	1.165862	1.164937	1.164027	1.163131	1.162249
39	1.168404	1.167464	1.166539	1.165629	1.164733
40	1.170917	1.169962	1.169023	1.168098	1.167188
41	1.173403	1.172433	1.171479	1.170540	1.169615
42	1.175861	1.174876	1.173908	1.172954	1.172016
43	1.178293	1.177294	1.176311	1.175344	1.174392
44	1.180700	1.179687	1.178690	1.177709	1.176743
45	1.183083	1.182056	1.181045	1.180050	1.179070
45	1.183083	1.182056	1.181045	1.180050	1.179070
50	1.194664	1.193567	1.192488	1.191426	1.190381
55	1.205750	1.204586	1.203441	1.202314	1.201205
60	1.216408	1.215179	1.213971	1.212782	1.211612
65	1.226692	1.225401	1.224132	1.222882	1.221652
70	1.236646	1.235295	1.233965	1.232657	1.231370
75	1.246306	1.244895	1.243508	1.242142	1.240798
80	1.255700	1.254232	1.252787	1.251366	1.249968
85	1.264853	1.263328	1.261829	1.260353	1.258901
90	1.273787	1.272207	1.270653	1.269124	1.267620
95	1.282519	1.280885	1.279278	1.277697	1.276141
100	1.291065	1.289379	1.287720	1.286087	1.284481