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Tables for the Rapid Evaluation of
the Debye Characteristic Temperature of
Cubic Crystals from Elastic Constants

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IN NUCLEAR SCIENCE ABSTRACTS

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**Tables for the Rapid Evaluation of
the Debye Characteristic Temperature of
Cubic Crystals from Elastic Constants**

by

W. C. Overton, Jr.
A. F. Schuch

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ABSTRACT

Extensive numerical calculations have been carried out on the CDC 6600 computer to obtain accurate tables of a function $G(S, \tau)$. These tables enable one to calculate the Debye characteristic temperature θ of any cubic crystal rapidly and with great accuracy. If the cubic crystal elastic constants are known then one evaluates the parameters $S = (c_{11} - c_{44})/(c_{12} + c_{44})$ and $\tau = (c_{12} + c_{44})/c_{44}$. The tables range from $S = 0.04$ to 4.51 (interval 0.03) and $\tau = 1.00$ to 4.80 (interval 0.05), which will span (S, τ) for practically all cubic crystals for which the c_{ij} 's are known. All table entries are accurate to ± 1 in the sixth decimal. One can compute θ with an absolute accuracy of better than ± 1 in 10^5 by two-dimensional interpolation. Usually, linear two-dimensional interpolation gives this accuracy. Any error in θ is essentially determined by the error in the input data, the elastic constants themselves. The boundary corresponding to the vanishing of the cubic shear elastic constant $(c_{11} - c_{12})/2$ is approximately delineated by the tables. The function $G(S, \tau)$ is equivalent to the cube root of de Launay's tabulated function $f(s, t)$, where $\tau = t + 2$; thus these tables are more convenient to use than his.

Comparisons of the θ 's at 0°K of eight different cubic crystals are made with those computed by other authors who used different methods of numerical integration. All results are found to agree within a few parts in a thousand.

ACKNOWLEDGMENT

The authors are indebted to Dr. Jules de Launay of the United States Naval Research Laboratory who was the first to prepare tables from which one could determine the Debye θ of cubic crystals. It was at his suggestion that we have applied our own highly accurate technique for numerical spatial integration to this problem in order to provide improved tables.

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INTRODUCTION

The Debye θ of a crystal solid is an important parameter which facilitates the qualitative and sometimes quantitative description of the thermodynamic properties. One finds θ from experimental specific heat data with the aid of tables of the Debye function or, at low temperatures, from the plot of C_v/T versus T^2 . The theoretical value of θ can be calculated for a given crystal if the elastic constants, the c_{ij} 's, are known. This calculation calls for averaging $[v_j(\psi, \phi)]^{-3}$ over all elastic polarization modes, the j 's, and all spatial directions defined by the polar coordinates, (ψ, ϕ) , where v_j is the velocity of sound of mode j .

Whatever method one uses for finding θ the value obtained can then be put to use immediately in approximating physical quantities of importance. Among these are the Debye-Waller factor for use in x-ray and neutron scattering analysis; the electronic specific heat of metals; the recoil-free fraction in Mössbauer effect studies; and the familiar thermodynamic quantities F , S , U , and C_v .

Although the Debye θ is often used in conjunction with the appropriate theoretical expressions to approximate the above quantities at all temperatures, the use of the Debye concept is only strictly valid at low temperatures. This is because the concept behind the Debye

theory is based upon the essential validity of the relationship $\nu = (\text{constant}) \times |\vec{q}|$, where ν is the vibrational frequency and $\vec{q}$ is the phonon wave propagation vector with which ν is associated. This relationship is essentially valid only in the long-wavelength or low-frequency limit, and this condition holds only when the high-frequency acoustical and/or optical modes of vibration are substantially unoccupied as in the case of low temperatures.

In this present work we shall be concerned only with the theoretical method of determining θ for cubic crystals in terms of the cubic crystal elastic constants c_{11} , c_{12} , and c_{44} . In particular, we wish to provide a set of tables which can be interpolated in two dimensions to give an accurate value of θ for any set of c_{ij} 's one is likely to encounter in practice. The need for such tables has become evident in numerous indications in the literature and in our own work. Such a need has long been recognized, and this has motivated other authors¹⁻⁸ to compute tables of functions or to devise integration procedures or machine programs for calculating θ .

It is important to remind the reader at this point that the value of θ computed from elastic constants measured near 0°K differs slightly from that determined from low-temperature specific heat measurements. This small difference is caused by anharmonic interactions, and the effect is discussed in some detail in Ref. 3.

The tables published or prepared by the mentioned authors have one or more of the disadvantages such as inadequate range, inaccuracy,

unavailability, inconvenience of usage, or other aspects mentioned below.

In computing the new tables herein with the CDC 6600 computer we have taken steps to eliminate most of these undesirable features.

The next section contains background information on the calculation of θ tables while in the section following we set down some pertinent mathematical aspects of the problem. In the fourth section we discuss computational details while in the last section results obtained with the new tables are compared with other works.

BACKGROUND

The Debye θ at 0°K of any cubic crystal may be expressed in the form,¹

$$\theta^3 = \frac{9N}{4\pi V} \left(\frac{h}{k} \right)^3 \left\{ \sum_{j=1}^3 \int_{\sigma_{v_j}} [v_j(\psi, \varphi)]^{-3} d\omega \right\}^{-1}, \quad (1)$$

where V is the molar volume; N the number of atoms per mol, i.e., N_0 or $2N_0$, $3N_0$, etc.; h is Planck's constant; and k is the Boltzmann constant. The velocity of low-frequency sound $v_j(\psi, \varphi)$ is a function of the polar coordinate angles (ψ, φ) of the direction of wave propagation. In the mathematical limit of long waves $v_j(\psi, \varphi) = v_j/q(\psi, \varphi)$, where v_j is a constant frequency for phonon branch j , and $q(\psi, \varphi)$ is the phonon wave propagation vector. The integral in Eq. (1) is carried out over the surface σ_{v_j} of constant frequency v_j ; accordingly, it specifies the average value of $1/v_j^3$. The wave polarization index j is varied only

over the three acoustical branches of the crystal, i.e., $j = 1, 2, 3$.

For a given set of cubic crystal elastic constants c_{11} , c_{12} , c_{44} , it is always a straightforward calculation to determine the part of Eq. (1) in curly brackets. However, such a calculation may be unduly laborious, time consuming, and inaccurate if done by a desk calculator. But machine calculations can be made as accurate as desired and still consume only a few minutes for any given set of c_{ij} 's. While such machine calculations are indeed fast, it is often inconvenient to have to go to the trouble to set up the program. On the other hand, evaluation by desk calculator is so laborious as to not be worth the amount of effort involved. Such considerations as these, for example, have led de Launay¹⁻⁴ to compute two-parameter tables of the function $f(S,t)$. Two-dimensional interpolation of these tables leads one to the value of θ^3 for any set of c_{ij} 's.

The two parameters chosen by de Launay^{1,2} come about naturally from the form for the secular equation for the elastic wave velocities. The particular representation he uses, (S,t) , is somewhat arbitrary; but this may be said of any set of two parameters one might choose (note, for example reference 5). The present work differs in that we use $\tau = t + 2$ instead of de Launay's parameter t . Factoring c_{44} out of Eq. (1) leads to

$$\theta^3 = \frac{9N}{4\pi V} \left(\frac{h}{k} \right)^3 \left(\frac{c_{44}}{\rho} \right)^{3/2} \left(\frac{9}{18 + \sqrt{3}} \right) f(S,\tau), \quad (2)$$

where ρ is the crystal density, and

$$\left. \begin{aligned} S &= \frac{c_{11} - c_{44}}{c_{12} + c_{44}}, \\ t &= \frac{c_{12} - c_{44}}{c_{44}}, \\ \tau &= \frac{c_{12} + c_{44}}{c_{44}} = t + 2. \end{aligned} \right\} \quad (3)$$

$$f(S, \tau) = \left(\frac{18 + \sqrt{3}}{9} \right) \left\{ \sum_{\sigma} \int_{v_j} \left[1 + \tau U_j(S; \psi, \varphi) \right]^{-3/2} d\omega \right\}^{-1}. \quad (4)$$

In Eq. (4) $U_j(S; \psi, \varphi)$ is the j th branch solution of the reduced cubic equation for the velocities [see Eq. (7) below]; it is independent of t or τ .

We have already referred to the inaccuracy of previously published tables. This is most noticeable in the parameter ranges where S and t are small, where both S and t are large, and near the theoretical boundary which corresponds to the vanishing of the shear elastic constant $(c_{11} - c_{12})/2$. In de Launay's tables, for example, errors in the tabular entries of $f(S, t)$ as large as 1 percent may occur in the parameter ranges corresponding to large elastic anisotropy. As discussed in Ref. 9, such errors arise because of the coarseness of the vector distribution used. In the calculation of $f(S, t)$ de Launay integrated over a distribution of some 70 vectors in the $1/48$ symmetry-irreducible

triangular angle of highest cubic symmetry. His choice of vectors are approximately those indicated in Fig. 1a.

In private discussions with Dr. de Launay it was pointed out that our finely divided vectorial distribution⁹ (see Fig. 1b), which was designed for highly accurate vibration spectrum calculations,¹⁰ could be readily adapted to the improvement of the tables. Accordingly, at his encouragement, we have calculated a new set of cubic crystal tables with the following properties:

- 1). Greater accuracy in all parameter ranges because of the use of the finer vectorial distribution of Fig. 1b and Ref. 9.
- 2). A higher density of both the S and τ parameter to permit accurate determinations of $f(S, \tau)$ by simple linear interpolation.
- 3). Extension of the t -parameter range to accommodate recently measured elastic constants which fall outside the range of de Launay's tables.
- 4). Extension of the tables to delineate the boundary corresponding to the vanishing of the cubic elastic constant $(c_{11} - c_{12})/2$.
- 5). Use of the parameter $\tau = (t + 2)$ instead of t to characterize the tables.
- 6). Instead of tabulating $f(S, t)$ we tabulate the cube root of it in the form $G(S, \tau)$. This makes use of the tables more convenient and the evaluation of θ more rapid.
- 7). We retain de Launay's normalization factor $(18 + \sqrt{3})/9$ which he chose because it corresponds to the case $c_{12} = c_{44}$ (his column headed $t = 0$, or our column $\tau = 2$).

Fig. 1. A typical $1/48$ symmetry-irreducible trihedral solid angle which satisfies highest cubic symmetry. (a) Subdivided into a distribution of 70 surface elements, the centroid of each of which is penetrated by a vector whose direction cosines are used in calculations of the Debye θ . (b) Subdivided into a uniform distribution of 489 surface elements all of which subtend exactly the same elemental solid angle $4\pi/(48 \times 489)$ steradians. The vector surrounded by each elemental cone pierces the centroid of the cone.

MATHEMATICAL ASPECTS

In the mathematical limit of long waves the acoustical part of the lattice vibrational secular equation for all cubic crystals reduces as follows:^{1,2}

$$\begin{aligned} D_{xx} &= (c_{11} - c_{44})q_x^2 + c_{44}q^2 - \rho v^2, \\ D_{xy} &= (c_{12} + c_{44})q_x q_y, \end{aligned} \quad (5)$$

where D_{xx} , D_{xy} denote elements of the determinant $\mathfrak{D} = 0$. Here, q_x , q_y , q_z are components of phonon wave propagation vector $\vec{q}$ and ρ is the physical density. When $\mathfrak{D} = 0$ is solved for its three roots v_1 ($j = 1$; longitudinal), v_2 ($j = 2$; high transverse), v_3 ($j = 3$; low transverse), one finds $v = v(\vec{q})$ as a linear function of $|\vec{q}|$ for all $\vec{q}$ close to the origin of the Brillouin zone. Upon dividing the elements of Eq. (5) by q^2 , one obtains elements which are recognized as those of the secular equation for elastic wave propagation in cubic crystals, e.g.,

$$\begin{aligned} E_{xx} &= (c_{11} - c_{44})P^2 + c_{44} - \rho v^2, \\ E_{xy} &= (c_{12} + c_{44})PQ, \end{aligned} \quad (6)$$

where $v = v/q$ is the phase velocity of the elastic wave, and P , Q , R are the direction cosines (q_x/q , q_y/q , q_z/q) of the velocity vector $\vec{v}$ (parallel to $\vec{q}$).

Dividing each element of Eq. (6) by $(c_{12} + c_{44})$ leads to the revised secular equation¹

$$\begin{vmatrix} SP^2 - U & PQ & PR \\ PQ & SQ^2 - U & QR \\ PR & QR & SR^2 - U \end{vmatrix} = 0, \quad (7)$$

where,

$$S = \frac{c_{11} - c_{44}}{c_{12} + c_{44}} \quad (8)$$

$$U = \frac{\rho v^2 / q^2 - c_{44}}{c_{12} + c_{44}} \quad (9)$$

In the present work we have only to solve Eq. (7) for each direction defined by P, Q, R. Expanding we obtain a cubic equation in U,

$$U^3 - U^2 S + U(S^2 - 1)K_{22} - (S^3 - 3S + 2)K_{\pi} = 0, \quad (10)$$

$$\begin{aligned} K_{22} &= P^2 Q^2 + Q^2 R^2 + R^2 P^2, \\ K_{\pi} &= P^2 Q^2 R^2. \end{aligned} \quad (11)$$

The functions K_{22} and K_{π} exhibit the highest cubic symmetry and are members of the set of cubic invariant polynomials.¹¹ One uses these and other members of the set as elements from which to construct the cubic harmonics.¹² But in present work we need only K_{22} and K_{π} .

The frequency distribution of lattice vibrations in the long wave limit is always a function of v^2 . If $G(v)dv$ specifies the number of modes of vibration between v and $v + dv$, then we may write

$$G(v)dv = Av^2 dv, \quad (12)$$

where A is a constant to be determined from the spatial integration of the solutions of Eq. (10). The constant A is related to the Debye θ as follows:

$$\int_0^{v_{\max}} G(v) dv = \frac{Av_{\max}^3}{3} = 3N,$$

$$A = \frac{9N}{v_{\max}^3}, \quad (13)$$

$$A = \frac{9Nh^3}{k^3 \theta^3},$$

$$\theta = \frac{hv_{\max}}{k}.$$

The use of $\theta = hv_{\max}/k$ as the θ -defining relation extends from the long-wave limit assumption $v = bq$ ($b = \text{a constant}$). In the true long-wave limit of any crystal $v_1(\text{longitudinal}) = b_1 q$, $v_2(\text{transverse}) = b_2 q$, $v_3(\text{transverse}) = b_3 q$, where generally $b_1 \neq b_2 \neq b_3$. Thus, we could in fact define three separate Debye θ 's, one for each of the three acoustic branches. While such a calculation would be no more time consuming or difficult than for a single θ , the tabulation for the range of parameters we consider here would be unduly lengthy. Accordingly, we compute only a single average θ in the usual way.

The formal method for computing the distribution function $G(v)$ for any frequency, high or low, is embodied in the expression

$$G(v) = \left(\frac{N}{v_{\text{zone}}} \right) \sum_{j=1}^r \left[\int_{\sigma_{v_j}} q^2 \left(\frac{\partial q}{\partial v} \right)_n d\omega \right]_j. \quad (14)$$

Here $\vec{q}$ is a vector of the Brillouin zone which terminates on the surface of constant frequency σ_{v_j} , the integrand is equivalent to the reciprocal of $|\text{grad}_{\vec{q}} v|$, and V_{zone} is the volume of the Brillouin zone in q -units. The surface σ_{v_j} may be simply connected, as for low frequencies, or multiply connected, as it often is for high frequencies.

In the long wave limit the integrand of Eq. (14) can be written in terms of the solutions of Eq. (10). If $U_j(\vec{q})$ is the j th branch root, then we find

$$\left[q^2 \left(\frac{\partial q}{\partial v} \right)_{n_j} \right] = \left[v_j(\vec{q}) \right]^2 \left\{ \frac{c_{44}}{\rho} [1 + \tau U_j(\vec{q})] \right\}^{-3/2}. \quad (15)$$

Let us now suppress $\vec{q}$ as a label and identify a vector direction by a direction number label i , where $i = 1, 2, 3, \dots, L$. Thus, the integral in Eq. (14), which implies integration over an infinitely dense distribution of vectors, is to be replaced by a finite sum according to

$$\frac{G(v)}{v^2} \cong \left(\frac{48N}{V_{\text{zone}}} \right) \left(\frac{\rho}{c_{44}} \right)^{3/2} \sum_{j=1}^3 \sum_{i=1}^L (1 + \tau U_{j,i})^{-3/2} \Delta\omega_i. \quad (16)$$

The factor 48 in Eq. (16) arises because of symmetry; it is presumed that the L vectors are distributed over one of the $1/48$ symmetry-irreducible trihedral-angle solid-angle segments corresponding to highest cubic symmetry. Then $\Delta\omega_i$ is the finite size of the elemental

solid-angle element surrounding the i th vector. We assume that the L vectors are always fairly uniformly distributed throughout the $1/48$ zone. The larger L is, the smaller we can make each $\Delta\omega_i$, and the more accurate the approximation (16) to the true expression (14) will be.

In Ref. 9 we have developed a distribution of $L = 489$ vectors distributed as indicated in Fig. 1b. This is to be compared with the earlier and cruder distribution of Fig. 1a inasmuch as θ tables have been based on both distributions. Moreover, this distribution has been designed so that all the $\Delta\omega_i$'s subtend exactly the same elemental solid angle, e.g., $4\pi/(48 \times 489)$ steradians. Such was not the case in earlier work so that each vector had to be appropriately weighted.

If we now combine Eqs. (13) and (16), replace the zone volume V_{zone} by its equivalent N/V_{molar} , employ de Launay's normalization factor $[(18 + \sqrt{3})/9]$, and finally take the cube root of the whole expression, we obtain

$$\theta = \left(\frac{h}{k}\right) \left(\frac{9N}{4\pi V}\right)^{1/3} \left(\frac{c_{44}}{\rho}\right)^{1/2} \left(\frac{9}{18 + \sqrt{3}}\right)^{1/3} G(S, \tau), \quad (17)$$

$$G(S, \tau) = \left\{ \frac{9}{18 + \sqrt{3}} \frac{1}{L} \sum_{j=1}^3 \sum_{i=1}^L \left[1 + \tau U_j(S; \psi, \varphi) \right]^{-3/2} \right\}^{-1/3}. \quad (18)$$

COMPUTATIONAL PROCEDURE

In order to calculate θ the main problem at hand is the evaluation of Eq. (18) for the two parameters (S, τ) . Our previous work⁹ makes this

task much easier because for each i in the summation there is the same weighting factor $4\pi/(48 \times 489)$ which is already included in the constants of Eqs. (17) and (18). We have but to solve Eq. (10) for each of the 489 vectors of the distribution. These vectors are described by the direction cosines of the form

$$\left. \begin{aligned} P_i &= \sin\psi_i \cos\phi_i, \\ Q_i &= \sin\psi_i \sin\phi_i, \\ R_i &= \cos\psi_i, \end{aligned} \right\} \quad (19)$$

$$i = 1, 2, 3, \dots, 489,$$

The carry-over from previous work⁹ is in the form of 489 sets of direction cosines which are available in the form of a deck of IBM cards punched in 13-decimal format. The CDC 6600 computer was used to calculate the $G(S, \tau)$ value of each of the 1,155 entries of Table I in which the S -interval is 0.03 and the τ -interval is 0.05. This choice of intervals practically guarantees that $G(S, \tau)$ will be accurate to at least five figures over most of the tabulated range with only linear interpolation.

It is of interest that the cubic equation (10) was solved for its three roots a total of $489 \times 1,155$ or 564,795 times; thus a total of 1,694,385 roots of the secular equation (7) were evaluated. Total machine time was about 1-1/2 hr.

The closure of the direction cosines was tested each time the program was run. The test consisted of computing $(P_i^2 + Q_i^2 + R_i^2)$;

$i = 1$ to 489. If this sum differed from unity by more than 1×10^{-11} for any i on any program run, the program for that run would have been rejected.

In order to facilitate the rapid use of the tables we write down a composite formula for θ which combines the constants (h/k) , $(9/4\pi)^{1/3}$, $[9/(18 + \sqrt{3})]^{1/3}$ appearing in Eqs. (17) and (18); thus

$$\theta = (3.30531 \times 10^{-11}) \left(\frac{N}{V} \right)^{1/3} \left(\frac{c_{44}}{\rho} \right)^{1/2} G(S, \tau) . \quad (20)$$

RESULTS AND DISCUSSION

A comparison of θ 's computed from elastic constants by various authors using careful integration techniques shows agreement within a few parts in a thousand. Such a comparison has been made by Alers and Neighbours.⁶ They studied Cu, Ag, Au, Li, Al, NaCl, KBr, and LiF cubic crystal data, and compared θ 's computed with those obtained from low-temperature specific heat data. They also compared with θ 's calculated by Quimby and Sutton,¹³ by Betts, et al.,¹⁴ and with θ 's computed with the aid of de Launay's tables. In Table II we extend their comparisons to include θ 's computed with the aid of Table I. Again, we find all θ values agree to within a few parts per thousand.

Inasmuch as all the table entries in Table I have absolute accuracy of ± 1 in the sixth decimal place, for reasons already discussed in Ref. 9, it is then possible to interpolate values of $G(S, \tau)$ which are at least as accurate as ± 5 in the sixth decimal place. In some cases this

may require central-difference interpolations out to third differences, but usually the linear two-dimensional interpolation scheme given below will suffice to give accuracy of ± 1 in 10^5 .

Accordingly, our work provides the most accurate basis for the determination of the Debye characteristic temperature from elastic constants now available. At the same time it probably gives θ more rapidly and more mistake-free than in any previous work. Furthermore, θ can be evaluated for a wider range of parameters of the set (S, τ) than in any previous work.

EXPLANATION OF TABLE I.

The two-dimensional table of the function $G(S, \tau)$, which is defined by Eq. (18), consists of 1,155 tabular entries of the function according to the following arrangement of the parameter sets (S, τ) :

$$\begin{aligned} 0.04 \leq S \leq 1.51, \quad 1.00 \leq \tau \leq 4.80; & \quad 11 \text{ pages} \\ 1.53 \leq S \leq 3.01, \quad 1.00 \leq \tau \leq 4.80; & \quad 11 \text{ pages} \\ 3.04 \leq S \leq 4.51, \quad 1.00 \leq \tau \leq 4.80; & \quad 11 \text{ pages} \end{aligned} \quad (21)$$

The boundary corresponding to the vanishing of the shear elastic constant $(c_{11} - c_{12})/2$ is approximately delineated by the tables. Table entries are given by the letter I for all cases in which the shear mode velocity was found to be imaginary. For all sets (S, τ) close to this boundary the function $G(S, \tau)$ changes fairly rapidly, particularly with respect to the parameter S . Accordingly, linear interpolation is somewhat inaccurate adjacent to this boundary and accurate only to a few

parts in 10^4 in a region close to the boundary. A scheme for accurate interpolation in this region is given later but first we write down the scheme for linear interpolation which gives accuracy to about 1 part in 10^5 over most of the table, e.g.,

$$\begin{array}{ccc}
 & \tau_0 & \tau_1 \\
 \begin{array}{c} S_0 \\ S_1 \end{array} & \begin{array}{cc} G_{00} & G_{01} \\ G_{10} & G_{11} \end{array} & \begin{array}{l} U = \frac{S - S_0}{S_1 - S_0}, \\ V = \frac{\tau - \tau_0}{\tau_1 - \tau_0}. \end{array}
 \end{array}
 \quad (22)$$

$G(S, \tau)$;

Two-dimensional linear interpolation of $G(S, \tau)$ is then given by

$$\begin{aligned}
 G(S, \tau) = & G_{00} + U(G_{10} - G_{00}) + V(G_{01} - G_{00}) \\
 & + UV(G_{11} + G_{00} - G_{10} - G_{01}).
 \end{aligned}
 \quad (23)$$

Inasmuch as linear interpolation with respect to τ is usually accurate, even near the I boundary, while interpolations with respect to S may not be accurate, we repeat, as an aid to the user, the usual third-difference interpolation scheme, with respect to S , as follows:

	τ_0	τ_1
$S_{\bar{1}}$	$G_{\bar{1}0}$	$G_{\bar{1}1}$
S_0	G_{00}	G_{01}
	$G(S, \tau_0)$	$G(S, \tau_1)$
S_1	G_{10}	G_{11}
S_2	G_{20}	G_{21}

With U and V defined as in Eq. (22), the standard central-difference formula is

$$G(S, \tau_0) = G_{00} + U\Delta + \frac{1}{2}U(U-1)\overline{\Delta^2} + (1/6)U(U^2-1)\Delta^3, \quad (24)$$

which gives $G(S, \tau_0)$ accurate to about ± 3 in the sixth decimal place.

Here $\overline{\Delta^2}$ is the average of the two second differences. One uses Eq. (24) again to compute $G(S, \tau_1)$; linear interpolation between $G(S, \tau_0)$ and $G(S, \tau_1)$ gives $G(S, \tau)$ to better than about ± 2 in 10^4 . If desired, one can go further and compute $G(S, \tau_{\frac{1}{2}})$, $G(S, \tau_0)$, $G(S, \tau_1)$, and $G(S, \tau_2)$ and again use the formula (24). This gives $G(S, \tau)$ accurate to about ± 5 in the sixth decimal place.

TABLE I. THE FUNCTION $G(S, T)$ FOR CURIC CRYSTALS.

S	T						
	1.00	1.05	1.10	1.15	1.20	1.25	1.30
0.04	0.836897	0.829772	0.822174	0.814075	0.805442	0.796235	0.786411
0.07	0.843071	0.836475	0.829449	0.821969	0.814009	0.805539	0.796520
0.10	0.849068	0.842972	0.836484	0.829585	0.822253	0.814464	0.806189
0.13	0.854897	0.849274	0.843293	0.836938	0.830194	0.823039	0.815451
0.16	0.860566	0.855392	0.849889	0.844047	0.837852	0.831288	0.824337
0.19	0.866084	0.861335	0.856285	0.850925	0.845245	0.839232	0.832874
0.22	0.871457	0.867113	0.862491	0.857586	0.852390	0.846893	0.841086
0.25	0.876694	0.872734	0.868518	0.864042	0.859301	0.854288	0.848996
0.28	0.881800	0.878205	0.874375	0.870305	0.865993	0.861434	0.856623
0.31	0.886781	0.883535	0.880070	0.876385	0.872478	0.868346	0.863985
0.34	0.891644	0.888730	0.885613	0.882292	0.878768	0.875037	0.871100
0.37	0.896393	0.893796	0.891010	0.888035	0.884873	0.881522	0.877982
0.40	0.901034	0.898740	0.896269	0.893623	0.890803	0.887810	0.884645
0.43	0.905570	0.903566	0.901396	0.899063	0.896568	0.893914	0.891101
0.46	0.910008	0.908281	0.906398	0.904362	0.902177	0.899843	0.897364
0.49	0.914349	0.912888	0.911280	0.909528	0.907636	0.905607	0.903442
0.52	0.918600	0.917393	0.916047	0.914566	0.912954	0.911213	0.909347
0.55	0.922762	0.921800	0.920706	0.919483	0.918137	0.916670	0.915087
0.58	0.926841	0.926113	0.925259	0.924284	0.923191	0.921986	0.920671
0.61	0.930838	0.930336	0.929713	0.928974	0.928124	0.927167	0.926107
0.64	0.934757	0.934472	0.934070	0.933558	0.932939	0.932220	0.931403
0.67	0.938602	0.938525	0.938336	0.938040	0.937643	0.937150	0.936564
0.70	0.942374	0.942498	0.942513	0.942426	0.942241	0.941964	0.941598
0.73	0.946076	0.946394	0.946606	0.946718	0.946736	0.946666	0.946511
0.76	0.949712	0.950216	0.950617	0.950921	0.951134	0.951262	0.951307
0.79	0.953282	0.953966	0.954549	0.955038	0.955439	0.955755	0.955993
0.82	0.956791	0.957648	0.958407	0.959073	0.959653	0.960151	0.960573
0.85	0.960239	0.961264	0.962192	0.963029	0.963782	0.964454	0.965052
0.88	0.963628	0.964816	0.965907	0.966909	0.967827	0.968667	0.969434
0.91	0.966962	0.968306	0.969555	0.970715	0.971793	0.972794	0.973723
0.94	0.970240	0.971736	0.973138	0.974451	0.975683	0.976839	0.977923
0.97	0.973467	0.975109	0.976658	0.978119	0.979499	0.980804	0.982037
1.00	0.976642	0.978426	0.980117	0.981722	0.983245	0.984692	0.986070
1.03	0.979767	0.981690	0.983519	0.985261	0.986922	0.988508	0.990023
1.06	0.982845	0.984901	0.986863	0.988739	0.990533	0.992252	0.993901
1.09	0.985876	0.988062	0.990153	0.992158	0.994081	0.995929	0.997706
1.12	0.988862	0.991174	0.993391	0.995520	0.997567	0.999539	1.001441
1.15	0.991805	0.994238	0.996577	0.998827	1.000995	1.003087	1.005108
1.18	0.994705	0.997257	0.999713	1.002080	1.004365	1.006573	1.008709
1.21	0.997564	1.000231	1.002802	1.005283	1.007680	1.010000	1.012248
1.24	1.000383	1.003162	1.005844	1.008435	1.010942	1.013370	1.015726
1.27	1.003163	1.006051	1.008841	1.011539	1.014152	1.016685	1.019145
1.30	1.005906	1.008899	1.011794	1.014596	1.017311	1.019947	1.022508
1.33	1.008611	1.011708	1.014704	1.017607	1.020423	1.023157	1.025816
1.36	1.011281	1.014478	1.017574	1.020575	1.023487	1.026317	1.029071
1.39	1.013916	1.017211	1.020403	1.023499	1.026506	1.029429	1.032274
1.42	1.016517	1.019908	1.023194	1.026383	1.029481	1.032494	1.035428
1.45	1.019086	1.022569	1.025947	1.029225	1.032412	1.035513	1.038534
1.48	1.021622	1.025196	1.028663	1.032029	1.035303	1.038489	1.041594
1.51	1.024127	1.027789	1.031343	1.034795	1.038152	1.041421	1.044608

TABLE I. (CONTINUED)

τ	1.35	1.40	1.45	1.50	1.55	1.60	1.65
0.04	0.775915	0.764684	0.752642	0.739697	0.725733	0.710608	0.694139
0.07	0.786913	0.776665	0.765720	0.754006	0.741437	0.727910	0.713293
0.10	0.797395	0.788042	0.778085	0.767470	0.756133	0.743996	0.730964
0.13	0.807405	0.798868	0.789807	0.780180	0.769937	0.759022	0.747364
0.16	0.816940	0.809192	0.800946	0.792210	0.782947	0.773115	0.762661
0.19	0.826154	0.819054	0.811552	0.803625	0.795245	0.786378	0.776988
0.22	0.834957	0.828490	0.821671	0.814481	0.806899	0.798900	0.790456
0.25	0.843415	0.837535	0.831344	0.824827	0.817971	0.810755	0.803159
0.28	0.851553	0.846216	0.840604	0.834706	0.828511	0.822005	0.815174
0.31	0.859392	0.854560	0.849484	0.844155	0.838566	0.832707	0.826567
0.34	0.866952	0.862590	0.858011	0.853208	0.848176	0.842908	0.837397
0.37	0.874251	0.870328	0.866211	0.861894	0.857376	0.852650	0.847713
0.40	0.881306	0.877793	0.874106	0.870241	0.866197	0.861971	0.857559
0.43	0.888131	0.885003	0.881716	0.878272	0.874668	0.870902	0.866973
0.46	0.894740	0.891972	0.889062	0.886009	0.882813	0.879474	0.875990
0.49	0.901145	0.898716	0.896158	0.893471	0.890655	0.887712	0.884640
0.52	0.907358	0.905249	0.903021	0.900676	0.898216	0.895640	0.892951
0.55	0.913390	0.911582	0.909665	0.907641	0.905513	0.903280	0.900945
0.58	0.919251	0.917727	0.916103	0.914381	0.912563	0.910651	0.908646
0.61	0.924949	0.923694	0.922346	0.920908	0.919381	0.917769	0.916073
0.64	0.930493	0.929492	0.928405	0.927235	0.925982	0.924652	0.923244
0.67	0.935890	0.935132	0.934291	0.933373	0.932379	0.931313	0.930175
0.70	0.941149	0.940619	0.940013	0.939334	0.938583	0.937765	0.936882
0.73	0.946276	0.945964	0.945579	0.945126	0.944605	0.944022	0.943377
0.76	0.951276	0.951172	0.950998	0.950758	0.950456	0.950093	0.949673
0.79	0.956157	0.956250	0.956277	0.956240	0.956144	0.955990	0.955782
0.82	0.960923	0.961204	0.961422	0.961578	0.961677	0.961722	0.961714
0.85	0.965580	0.966041	0.966440	0.966780	0.967065	0.967297	0.967479
0.88	0.970132	0.970765	0.971337	0.971852	0.972314	0.972724	0.973086
0.91	0.974584	0.975381	0.976119	0.976801	0.977430	0.978010	0.978543
0.94	0.978940	0.979895	0.980791	0.981632	0.982422	0.983162	0.983857
0.97	0.983205	0.984310	0.985358	0.986351	0.987293	0.988187	0.989036
1.00	0.987381	0.988632	0.989824	0.990963	0.992051	0.993091	0.994087
1.03	0.991474	0.992862	0.994194	0.995472	0.996699	0.997879	0.999015
1.06	0.995485	0.997007	0.998472	0.999883	1.001244	1.002557	1.003826
1.09	0.999418	1.001068	1.002661	1.004200	1.005689	1.007130	1.008527
1.12	1.003276	1.005050	1.006766	1.008427	1.010039	1.011602	1.013121
1.15	1.007062	1.008954	1.010789	1.012568	1.014297	1.015978	1.017613
1.18	1.010779	1.012785	1.014733	1.016626	1.018468	1.020261	1.022008
1.21	1.014428	1.016545	1.018603	1.020605	1.022555	1.024456	1.026311
1.24	1.018013	1.020237	1.022400	1.024507	1.026562	1.028566	1.030524
1.27	1.021536	1.023862	1.026128	1.028336	1.030491	1.032595	1.034652
1.30	1.024999	1.027424	1.029788	1.032094	1.034346	1.036546	1.038698
1.33	1.028404	1.030925	1.033384	1.035784	1.038129	1.040421	1.042665
1.36	1.031752	1.034366	1.036917	1.039408	1.041843	1.044225	1.046557
1.39	1.035047	1.037751	1.040390	1.042969	1.045491	1.047958	1.050375
1.42	1.038289	1.041080	1.043805	1.046469	1.049074	1.051625	1.054124
1.45	1.041480	1.044355	1.047164	1.049910	1.052596	1.055227	1.057805
1.48	1.044622	1.047579	1.050468	1.053293	1.056059	1.058767	1.061421
1.51	1.047717	1.050753	1.053720	1.056622	1.059464	1.062247	1.064975

TABLE I. (CONTINUED)

S	T						
	1.70	1.75	1.80	1.85	1.90	1.95	2.00
0.04	0.676081	0.656105	0.633734	0.608251	0.578466	0.542162	0.494236
0.07	0.697419	0.680071	0.660954	0.639654	0.615555	0.587673	0.554253
0.10	0.716920	0.701717	0.685162	0.667000	0.646878	0.624285	0.598429
0.13	0.734881	0.721468	0.706996	0.691302	0.674167	0.655299	0.634284
0.16	0.751525	0.739633	0.726898	0.713207	0.698423	0.682365	0.664795
0.19	0.767029	0.756449	0.745186	0.733163	0.720288	0.706446	0.691490
0.22	0.781535	0.772098	0.762101	0.751491	0.740205	0.728166	0.715282
0.25	0.795159	0.786728	0.777834	0.768438	0.758498	0.747961	0.736766
0.28	0.807998	0.800459	0.792532	0.784193	0.775409	0.766146	0.756362
0.31	0.820132	0.813389	0.806321	0.798908	0.791130	0.782962	0.774375
0.34	0.831632	0.825604	0.819300	0.812707	0.805813	0.798597	0.791040
0.37	0.842556	0.837173	0.831557	0.825696	0.819582	0.813201	0.806541
0.40	0.852956	0.848159	0.843162	0.837957	0.832539	0.826898	0.821025
0.43	0.862878	0.858614	0.854178	0.849565	0.844770	0.839788	0.834613
0.46	0.872361	0.868585	0.864659	0.860582	0.856349	0.851958	0.847405
0.49	0.881440	0.878112	0.874653	0.871062	0.867339	0.863481	0.859485
0.52	0.890147	0.887230	0.884199	0.881054	0.877794	0.874418	0.870924
0.55	0.898509	0.895972	0.893334	0.890597	0.887760	0.884823	0.881785
0.58	0.906551	0.904365	0.902091	0.899729	0.897279	0.894743	0.892119
0.61	0.914295	0.912436	0.910498	0.908482	0.906389	0.904219	0.901974
0.64	0.921762	0.920207	0.918581	0.916885	0.915120	0.913288	0.911390
0.67	0.928970	0.927698	0.926362	0.924962	0.923502	0.921981	0.920402
0.70	0.935935	0.934928	0.933862	0.932739	0.931560	0.930328	0.929043
0.73	0.942674	0.941914	0.941101	0.940235	0.939318	0.938352	0.937340
0.76	0.949199	0.948672	0.948094	0.947468	0.946796	0.946079	0.945318
0.79	0.955523	0.955214	0.954858	0.954457	0.954013	0.953527	0.953002
0.82	0.961658	0.961555	0.961407	0.961217	0.960986	0.960716	0.960410
0.85	0.967615	0.967705	0.967753	0.967761	0.967730	0.967663	0.967561
0.88	0.973403	0.973676	0.973909	0.974103	0.974260	0.974383	0.974472
0.91	0.979031	0.979478	0.979885	0.980255	0.980589	0.980889	0.981158
0.94	0.984508	0.985119	0.985691	0.986226	0.986728	0.987196	0.987633
0.97	0.989842	0.990608	0.991336	0.992029	0.992687	0.993314	0.993910
1.00	0.995040	0.995954	0.996830	0.997671	0.998478	0.999254	1.000000
1.03	1.000108	1.001162	1.002179	1.003161	1.004109	1.005027	1.005914
1.06	1.005053	1.006241	1.007392	1.008507	1.009589	1.010640	1.011661
1.09	1.009881	1.011196	1.012474	1.013717	1.014926	1.016104	1.017251
1.12	1.014597	1.016034	1.017433	1.018796	1.020126	1.021424	1.022693
1.15	1.019206	1.020759	1.022273	1.023752	1.025197	1.026610	1.027992
1.18	1.023713	1.025376	1.027002	1.028591	1.030145	1.031667	1.033158
1.21	1.028122	1.029892	1.031623	1.033317	1.034976	1.036602	1.038196
1.24	1.032438	1.034309	1.036141	1.037936	1.039695	1.041420	1.043114
1.27	1.036664	1.038633	1.040562	1.042453	1.044307	1.046128	1.047915
1.30	1.040804	1.042867	1.044889	1.046872	1.048818	1.050729	1.052606
1.33	1.044862	1.047015	1.049126	1.051198	1.053231	1.055229	1.057192
1.36	1.048841	1.051080	1.053277	1.055433	1.057551	1.059632	1.061678
1.39	1.052744	1.055066	1.057346	1.059583	1.061782	1.063943	1.066068
1.42	1.056573	1.058976	1.061335	1.063651	1.065927	1.068165	1.070366
1.45	1.060333	1.062813	1.065248	1.067640	1.069990	1.072301	1.074575
1.48	1.064025	1.066579	1.069088	1.071552	1.073974	1.076357	1.078700
1.51	1.067651	1.070278	1.072857	1.075391	1.077883	1.080333	1.082745

TABLE I. (CONTINUED)

S	T						
	2.05	2.10	2.15	2.20	2.25	2.30	2.35
0.04	0.416342	I	I	I	I	I	I
0.07	0.511590	0.448844	0.214746	I	I	I	I
0.10	0.567970	0.530307	0.479035	0.386037	I	I	I
0.13	0.610503	0.582960	0.549872	0.507437	0.444331	I	I
0.16	0.645384	0.623662	0.598905	0.569908	0.534398	0.487059	0.408036
0.19	0.675231	0.657415	0.637688	0.615535	0.590149	0.560156	0.522850
0.22	0.701434	0.686475	0.670212	0.652384	0.632626	0.610405	0.584878
0.25	0.724838	0.712086	0.698395	0.683621	0.667573	0.649999	0.630542
0.28	0.746006	0.735022	0.723337	0.710866	0.697502	0.683107	0.667506
0.31	0.765336	0.755806	0.745740	0.735084	0.723774	0.711731	0.698858
0.34	0.783120	0.774811	0.766084	0.756903	0.747229	0.737014	0.726200
0.37	0.799586	0.792319	0.784719	0.776765	0.768430	0.759684	0.750493
0.40	0.814911	0.808543	0.801908	0.794991	0.787775	0.780242	0.772369
0.43	0.829238	0.823655	0.817855	0.811828	0.805564	0.799049	0.792271
0.46	0.842685	0.837792	0.832722	0.827468	0.822022	0.816377	0.810524
0.49	0.855349	0.851069	0.846643	0.842065	0.837332	0.832438	0.827378
0.52	0.867313	0.863580	0.859726	0.855746	0.851638	0.847400	0.843027
0.55	0.878646	0.875405	0.872061	0.868613	0.865059	0.861398	0.857627
0.58	0.889409	0.886612	0.883727	0.880755	0.877695	0.874545	0.871306
0.61	0.899654	0.897259	0.894790	0.892246	0.889628	0.886935	0.884167
0.64	0.909426	0.907397	0.905305	0.903148	0.900929	0.898646	0.896301
0.67	0.918765	0.917071	0.915322	0.913518	0.911659	0.909746	0.907781
0.70	0.927706	0.926320	0.924885	0.923401	0.921871	0.920294	0.918672
0.73	0.936281	0.935177	0.934030	0.932841	0.931610	0.930339	0.929028
0.76	0.944516	0.943674	0.942793	0.941873	0.940917	0.939925	0.938899
0.79	0.952438	0.951837	0.951201	0.950531	0.949827	0.949092	0.948325
0.82	0.960067	0.959691	0.959282	0.958842	0.958372	0.957872	0.957344
0.85	0.967425	0.967258	0.967060	0.966833	0.966578	0.966296	0.965989
0.88	0.974529	0.974557	0.974556	0.974527	0.974472	0.974392	0.974288
0.91	0.981396	0.981606	0.981788	0.981944	0.982075	0.982182	0.982266
0.94	0.988041	0.988421	0.988775	0.989103	0.989407	0.989689	0.989949
0.97	0.994477	0.995018	0.995532	0.996022	0.996488	0.996932	0.997355
1.00	1.000718	1.001408	1.002074	1.002714	1.003332	1.003929	1.004504
1.03	1.006773	1.007606	1.008413	1.009196	1.009956	1.010695	1.011413
1.06	1.012654	1.013621	1.014562	1.015479	1.016373	1.017245	1.018097
1.09	1.018371	1.019464	1.020531	1.021574	1.022594	1.023592	1.024570
1.12	1.023932	1.025145	1.026331	1.027494	1.028633	1.029749	1.030845
1.15	1.029346	1.030672	1.031972	1.033247	1.034498	1.035721	1.036934
1.18	1.034620	1.036054	1.037461	1.038842	1.040200	1.041534	1.042847
1.21	1.039761	1.041297	1.042806	1.044289	1.045747	1.047182	1.048594
1.24	1.044776	1.046410	1.048015	1.049595	1.051149	1.052679	1.054185
1.27	1.049671	1.051398	1.053096	1.054766	1.056411	1.058032	1.059628
1.30	1.054452	1.056267	1.058053	1.059811	1.061542	1.063248	1.064930
1.33	1.059123	1.061023	1.062893	1.064734	1.066548	1.068336	1.070099
1.36	1.063691	1.065671	1.067621	1.069542	1.071435	1.073301	1.075141
1.39	1.068159	1.070217	1.072244	1.074240	1.076208	1.078148	1.080062
1.42	1.072531	1.074664	1.076764	1.078833	1.080873	1.082885	1.084869
1.45	1.076813	1.079017	1.081187	1.083326	1.085435	1.087515	1.089566
1.48	1.081008	1.083279	1.085518	1.087724	1.089898	1.092043	1.094159
1.51	1.085118	1.087456	1.089759	1.092029	1.094267	1.096474	1.098652

TABLE I. (CONTINUED)

S	T						
	2.40	2.45	2.50	2.55	2.60	2.65	2.70
0.04	I	I	I	I	I	I	I
0.07	I	I	I	I	I	I	I
0.10	I	I	I	I	I	I	I
0.13	I	I	I	I	I	I	I
0.16	I	I	I	I	I	I	I
0.19	0.471417	0.373712	I	I	I	I	I
0.22	0.554591	0.516622	0.463348	0.353340	I	I	I
0.25	0.608683	0.583604	0.553901	0.516781	0.465079	0.362737	I
0.28	0.650464	0.631654	0.610603	0.586583	0.558365	0.523601	0.476687
0.31	0.685034	0.670101	0.653855	0.636014	0.616177	0.593745	0.567747
0.34	0.714720	0.702490	0.689405	0.675335	0.660108	0.643496	0.625184
0.37	0.740816	0.730605	0.719802	0.708339	0.696131	0.683071	0.669027
0.40	0.764131	0.755499	0.746440	0.736915	0.726878	0.716274	0.705037
0.43	0.785212	0.777856	0.770183	0.762168	0.753786	0.745005	0.735791
0.46	0.804453	0.798152	0.791609	0.784810	0.777740	0.770379	0.762709
0.49	0.822145	0.816733	0.811133	0.805337	0.799336	0.793118	0.786672
0.52	0.838517	0.833863	0.829063	0.824110	0.818998	0.813722	0.808274
0.55	0.853745	0.849748	0.845634	0.841400	0.837042	0.832556	0.827939
0.58	0.867975	0.864551	0.861033	0.857419	0.853707	0.849895	0.845981
0.61	0.881324	0.878405	0.875410	0.872337	0.869186	0.865955	0.862643
0.64	0.893892	0.891421	0.888888	0.886290	0.883630	0.880905	0.878116
0.67	0.905762	0.903691	0.901568	0.899392	0.897165	0.894885	0.892554
0.70	0.917004	0.915292	0.913536	0.911737	0.909895	0.908009	0.906081
0.73	0.927679	0.926291	0.924866	0.923404	0.921906	0.920372	0.918803
0.76	0.937838	0.936745	0.935619	0.934461	0.933273	0.932054	0.930806
0.79	0.947529	0.946703	0.945849	0.944967	0.944059	0.943124	0.942164
0.82	0.956790	0.956209	0.955603	0.954972	0.954318	0.953641	0.952942
0.85	0.965657	0.965301	0.964922	0.964521	0.964098	0.963656	0.963193
0.88	0.974161	0.974011	0.973841	0.973651	0.973441	0.973212	0.972965
0.91	0.982329	0.982371	0.982393	0.982397	0.982382	0.982349	0.982300
0.94	0.990187	0.990407	0.990607	0.990789	0.990953	0.991102	0.991234
0.97	0.997757	0.998141	0.998506	0.998854	0.999185	0.999500	0.999799
1.00	1.005059	1.005596	1.006114	1.006616	1.007101	1.007570	1.008024
1.03	1.012111	1.012790	1.013452	1.014096	1.014725	1.015337	1.015935
1.06	1.018928	1.019742	1.020537	1.021315	1.022077	1.022823	1.023554
1.09	1.025527	1.026466	1.027386	1.028289	1.029175	1.030046	1.030901
1.12	1.031920	1.032976	1.034014	1.035034	1.036037	1.037024	1.037996
1.15	1.038120	1.039287	1.040435	1.041565	1.042678	1.043774	1.044855
1.18	1.044138	1.045410	1.046662	1.047895	1.049111	1.050310	1.051492
1.21	1.049985	1.051355	1.052705	1.054036	1.055349	1.056644	1.057923
1.24	1.055670	1.057133	1.058576	1.059999	1.061404	1.062790	1.064159
1.27	1.061201	1.062753	1.064284	1.065794	1.067285	1.068757	1.070212
1.30	1.066588	1.068224	1.069838	1.071431	1.073004	1.074557	1.076092
1.33	1.071837	1.073552	1.075245	1.076917	1.078567	1.080198	1.081810
1.36	1.076956	1.078747	1.080515	1.082261	1.083985	1.085689	1.087373
1.39	1.081950	1.083814	1.085653	1.087470	1.089265	1.091038	1.092791
1.42	1.086826	1.088759	1.090667	1.092551	1.094413	1.096252	1.098070
1.45	1.091590	1.093589	1.095562	1.097510	1.099436	1.101338	1.103219
1.48	1.096247	1.098308	1.100343	1.102354	1.104340	1.106303	1.108243
1.51	1.100801	1.102922	1.105017	1.107087	1.109131	1.111151	1.113148

TABLE 1. (CONTINUED)

S	T						
	2.75	2.80	2.85	2.90	2.95	3.00	3.05
0.04	I	I	I	I	I	I	I
0.07	I	I	I	I	I	I	I
0.10	I	I	I	I	I	I	I
0.13	I	I	I	I	I	I	I
0.16	I	I	I	I	I	I	I
0.19	I	I	I	I	I	I	I
0.22	I	I	I	I	I	I	I
0.25	I	I	I	I	I	I	I
0.28	0.395526	I	I	I	I	I	I
0.31	0.536431	0.496049	0.435377	0.071757	I	I	I
0.34	0.604715	0.581383	0.554010	0.520351	0.475134	0.398416	I
0.37	0.653823	0.637225	0.618908	0.598395	0.574949	0.547315	0.513067
0.40	0.693085	0.680319	0.666612	0.651799	0.635659	0.617889	0.598048
0.43	0.726102	0.715887	0.705088	0.693634	0.681434	0.668378	0.654324
0.46	0.754706	0.746343	0.737590	0.728411	0.718764	0.708600	0.697858
0.49	0.779985	0.773041	0.765823	0.758313	0.750489	0.742325	0.733793
0.52	0.802646	0.796830	0.790816	0.784593	0.778149	0.771471	0.764544
0.55	0.823185	0.818290	0.813247	0.808052	0.802697	0.797174	0.791476
0.58	0.841961	0.837833	0.833594	0.829241	0.824768	0.820173	0.815451
0.61	0.859249	0.855771	0.852208	0.848557	0.844817	0.840984	0.837058
0.64	0.875262	0.872342	0.869355	0.866300	0.863177	0.859984	0.856720
0.67	0.890170	0.887733	0.885244	0.882702	0.880106	0.877457	0.874752
0.70	0.904111	0.902098	0.900043	0.897946	0.895806	0.893624	0.891399
0.73	0.917198	0.915559	0.913886	0.912179	0.910437	0.908662	0.906853
0.76	0.929528	0.928221	0.926886	0.925523	0.924132	0.922714	0.921269
0.79	0.941179	0.940170	0.939136	0.938080	0.937000	0.935898	0.934773
0.82	0.952221	0.951479	0.950716	0.949933	0.949131	0.948310	0.947471
0.85	0.962711	0.962211	0.961692	0.961156	0.960604	0.960034	0.959449
0.88	0.972701	0.972420	0.972123	0.971810	0.971483	0.971140	0.970784
0.91	0.982235	0.982154	0.982058	0.981949	0.981825	0.981688	0.981539
0.94	0.991351	0.991454	0.991542	0.991618	0.991680	0.991730	0.991768
0.97	1.000084	1.000355	1.000613	1.000858	1.001090	1.001311	1.001520
1.00	1.008464	1.008891	1.009304	1.009705	1.010093	1.010470	1.010836
1.03	1.016519	1.017089	1.017645	1.018190	1.018722	1.019243	1.019753
1.06	1.024271	1.024974	1.025664	1.026341	1.027007	1.027661	1.028303
1.09	1.031742	1.032569	1.033383	1.034184	1.034973	1.035749	1.036515
1.12	1.038953	1.039895	1.040824	1.041740	1.042643	1.043534	1.044414
1.15	1.045920	1.046970	1.048007	1.049030	1.050040	1.051037	1.052022
1.18	1.052659	1.053811	1.054948	1.056071	1.057181	1.058277	1.059361
1.21	1.059185	1.060432	1.061663	1.062880	1.064083	1.065273	1.066449
1.24	1.065511	1.066847	1.068167	1.069472	1.070763	1.072040	1.073303
1.27	1.071649	1.073069	1.074472	1.075861	1.077234	1.078592	1.079936
1.30	1.077609	1.079109	1.080591	1.082058	1.083508	1.084944	1.086365
1.33	1.083402	1.084977	1.086534	1.088075	1.089599	1.091107	1.092600
1.36	1.089038	1.090684	1.092311	1.093922	1.095515	1.097092	1.098653
1.39	1.094524	1.096237	1.097932	1.099608	1.101267	1.102909	1.104535
1.42	1.099868	1.101646	1.103404	1.105144	1.106865	1.108569	1.110255
1.45	1.105078	1.106917	1.108736	1.110535	1.112316	1.114078	1.115823
1.48	1.110161	1.112058	1.113935	1.115791	1.117628	1.119446	1.121245
1.51	1.115123	1.117075	1.119007	1.120917	1.122808	1.124679	1.126531

TABLE 1. (CONTINUED)

S	T						
	3.10	3.15	3.20	3.25	3.30	3.35	3.40
0.04	I	I	I	I	I	I	I
0.07	I	I	I	I	I	I	I
0.10	I	I	I	I	I	I	I
0.13	I	I	I	I	I	I	I
0.16	I	I	I	I	I	I	I
0.19	I	I	I	I	I	I	I
0.22	I	I	I	I	I	I	I
0.25	I	I	I	I	I	I	I
0.28	I	I	I	I	I	I	I
0.31	I	I	I	I	I	I	I
0.34	I	I	I	I	I	I	I
0.37	0.466294	0.382251	I	I	I	I	I
0.40	0.575462	0.549002	0.516545	0.473181	0.401186	I	I
0.43	0.639083	0.622402	0.603922	0.583107	0.559105	0.530417	0.493962
0.46	0.686466	0.674334	0.661351	0.647370	0.632202	0.615585	0.597149
0.49	0.724860	0.715486	0.705626	0.695224	0.684214	0.672513	0.660020
0.52	0.757351	0.749873	0.742087	0.733970	0.725492	0.716621	0.707316
0.55	0.785593	0.779515	0.773232	0.766730	0.759997	0.753016	0.745769
0.58	0.810596	0.805604	0.800468	0.795181	0.789738	0.784129	0.778346
0.61	0.833034	0.828410	0.824683	0.820349	0.815905	0.811346	0.806660
0.64	0.853382	0.849971	0.846484	0.842919	0.839275	0.835548	0.831738
0.67	0.871993	0.869177	0.866304	0.863374	0.860386	0.857337	0.854228
0.70	0.889132	0.886822	0.884469	0.882072	0.879631	0.877145	0.874615
0.73	0.905011	0.903135	0.901226	0.899284	0.897307	0.895298	0.893254
0.76	0.919797	0.918299	0.916774	0.915223	0.913646	0.912043	0.910414
0.79	0.933627	0.932459	0.931270	0.930060	0.928830	0.927579	0.926308
0.82	0.946613	0.945737	0.944844	0.943934	0.943007	0.942064	0.941104
0.85	0.958849	0.958233	0.957603	0.956958	0.956299	0.955627	0.954941
0.88	0.970414	0.970031	0.969635	0.969227	0.968807	0.968375	0.967931
0.91	0.981377	0.981203	0.981018	0.980822	0.980615	0.980398	0.980171
0.94	0.991795	0.991811	0.991816	0.991811	0.991796	0.991772	0.991739
0.97	1.001719	1.001907	1.002085	1.002253	1.002412	1.002562	1.002704
1.00	1.011192	1.011537	1.011873	1.012199	1.012516	1.012824	1.013124
1.03	1.020253	1.020742	1.021222	1.021692	1.022153	1.022606	1.023050
1.06	1.028935	1.029557	1.030169	1.030772	1.031365	1.031950	1.032526
1.09	1.037270	1.038014	1.038748	1.039472	1.040187	1.040893	1.041590
1.12	1.045282	1.046139	1.046986	1.047823	1.048650	1.049468	1.050276
1.15	1.052996	1.053958	1.054910	1.055851	1.056782	1.057703	1.058615
1.18	1.060433	1.061494	1.062543	1.063581	1.064608	1.065625	1.066632
1.21	1.067613	1.068765	1.069904	1.071033	1.072150	1.073257	1.074353
1.24	1.074552	1.075789	1.077014	1.078227	1.079428	1.080618	1.081797
1.27	1.081267	1.082584	1.083888	1.085180	1.086460	1.087728	1.088984
1.30	1.087771	1.089164	1.090543	1.091909	1.093262	1.094603	1.095931
1.33	1.094078	1.095541	1.096990	1.098426	1.099849	1.101258	1.102655
1.36	1.100198	1.101729	1.103244	1.104746	1.106234	1.107708	1.109169
1.39	1.106144	1.107738	1.109316	1.110880	1.112429	1.113964	1.115486
1.42	1.111925	1.113578	1.115216	1.116839	1.118446	1.120039	1.121617
1.45	1.117550	1.119260	1.120954	1.122632	1.124295	1.125942	1.127575
1.48	1.123027	1.124792	1.126539	1.128270	1.129985	1.131684	1.133368
1.51	1.128365	1.130180	1.131979	1.133760	1.135524	1.137273	1.139005

TABLE I. (CONTINUED)

S	T						
	3.45	3.50	3.55	3.60	3.65	3.70	3.75
0.04	I	I	I	I	I	I	I
0.07	I	I	I	I	I	I	I
0.10	I	I	I	I	I	I	I
0.13	I	I	I	I	I	I	I
0.16	I	I	I	I	I	I	I
0.19	I	I	I	I	I	I	I
0.22	I	I	I	I	I	I	I
0.25	I	I	I	I	I	I	I
0.28	I	I	I	I	I	I	I
0.31	I	I	I	I	I	I	I
0.34	I	I	I	I	I	I	I
0.37	I	I	I	I	I	I	I
0.40	I	I	I	I	I	I	I
0.43	0.441333	0.316574	I	I	I	I	I
0.46	0.576340	0.552267	0.523340	0.486229	0.431425	0.273714	I
0.49	0.646604	0.632094	0.616260	0.598780	0.579182	0.556727	0.530151
0.52	0.697532	0.687213	0.676293	0.664688	0.652296	0.638983	0.624576
0.55	0.738237	0.730398	0.722224	0.713686	0.704748	0.695370	0.685501
0.58	0.772380	0.766220	0.759854	0.753270	0.746451	0.739383	0.732045
0.61	0.801867	0.796936	0.791870	0.786663	0.781307	0.775797	0.770122
0.64	0.827841	0.823855	0.819776	0.815602	0.811330	0.806955	0.802474
0.67	0.851056	0.847821	0.844522	0.841156	0.837721	0.834217	0.830642
0.70	0.872039	0.869418	0.866749	0.864033	0.861269	0.858456	0.855593
0.73	0.891176	0.889065	0.886919	0.884738	0.882523	0.880272	0.877986
0.76	0.908760	0.907079	0.905373	0.903641	0.901884	0.900101	0.898291
0.79	0.925017	0.923706	0.922375	0.921025	0.919655	0.918266	0.916858
0.82	0.940129	0.939138	0.938131	0.937109	0.936072	0.935021	0.933954
0.85	0.954242	0.953531	0.952807	0.952070	0.951322	0.950562	0.949790
0.88	0.967477	0.967012	0.966536	0.966051	0.965555	0.965050	0.964535
0.91	0.979934	0.979688	0.979432	0.979168	0.978896	0.978615	0.978326
0.94	0.991697	0.991646	0.991587	0.991520	0.991446	0.991364	0.991275
0.97	1.002837	1.002962	1.003079	1.003189	1.003292	1.003388	1.003478
1.00	1.013416	1.013700	1.013976	1.014246	1.014508	1.014764	1.015013
1.03	1.023486	1.023914	1.024335	1.024749	1.025156	1.025556	1.025949
1.06	1.033093	1.033653	1.034206	1.034751	1.035289	1.035820	1.036345
1.09	1.042278	1.042959	1.043632	1.044297	1.044955	1.045605	1.046249
1.12	1.051076	1.051867	1.052651	1.053426	1.054193	1.054954	1.055706
1.15	1.059517	1.060411	1.061296	1.062173	1.063041	1.063902	1.064755
1.18	1.067630	1.068618	1.069597	1.070568	1.071530	1.072483	1.073429
1.21	1.075439	1.076515	1.077581	1.078639	1.079687	1.080726	1.081757
1.24	1.082965	1.084123	1.085271	1.086409	1.087537	1.088657	1.089767
1.27	1.090229	1.091463	1.092687	1.093900	1.095104	1.096297	1.097481
1.30	1.097249	1.098554	1.099849	1.101133	1.102406	1.103669	1.104922
1.33	1.104040	1.105412	1.106774	1.108123	1.109462	1.110790	1.112107
1.36	1.110617	1.112053	1.113476	1.114888	1.116288	1.117677	1.119054
1.39	1.116994	1.118489	1.119971	1.121441	1.122899	1.124345	1.125780
1.42	1.123182	1.124733	1.126271	1.127796	1.129308	1.130808	1.132296
1.45	1.129193	1.130797	1.132387	1.133964	1.135528	1.137079	1.138617
1.48	1.135036	1.136691	1.138331	1.139957	1.141569	1.143169	1.144755
1.51	1.140722	1.142424	1.144111	1.145784	1.147443	1.149088	1.150719

TABLE I. (CONTINUED)

S	T						
	3.80	3.85	3.90	3.95	4.00	4.05	4.10
0.04	I	I	I	I	I	I	I
0.07	I	I	I	I	I	I	I
0.10	I	I	I	I	I	I	I
0.13	I	I	I	I	I	I	I
0.16	I	I	I	I	I	I	I
0.19	I	I	I	I	I	I	I
0.22	I	I	I	I	I	I	I
0.25	I	I	I	I	I	I	I
0.28	I	I	I	I	I	I	I
0.31	I	I	I	I	I	I	I
0.34	I	I	I	I	I	I	I
0.37	I	I	I	I	I	I	I
0.40	I	I	I	I	I	I	I
0.43	I	I	I	I	I	I	I
0.46	I	I	I	I	I	I	I
0.49	0.496978	0.451052	0.364895	I	I	I	I
0.52	0.608840	0.591445	0.571904	0.549447	0.522746	0.489148	0.441836
0.55	0.675082	0.664042	0.652289	0.639710	0.626159	0.611438	0.595280
0.58	0.724416	0.716473	0.708187	0.699525	0.690448	0.680911	0.670859
0.61	0.764274	0.758243	0.752018	0.745586	0.738934	0.732044	0.724901
0.64	0.797883	0.793176	0.788350	0.783398	0.778314	0.773092	0.767726
0.67	0.826992	0.823267	0.819463	0.815578	0.811610	0.807556	0.803412
0.70	0.852679	0.849714	0.846695	0.843622	0.840494	0.837309	0.834067
0.73	0.875664	0.873306	0.870911	0.868478	0.866008	0.863499	0.860952
0.76	0.896456	0.894595	0.892708	0.890794	0.888854	0.886887	0.884893
0.79	0.915431	0.913984	0.912518	0.911034	0.909530	0.908007	0.906466
0.82	0.932873	0.931778	0.930668	0.929544	0.928407	0.927255	0.926089
0.85	0.949007	0.948213	0.947408	0.946592	0.945766	0.944928	0.944081
0.88	0.964011	0.963478	0.962936	0.962386	0.961827	0.961260	0.960685
0.91	0.978029	0.977725	0.977413	0.977094	0.976768	0.976435	0.976096
0.94	0.991179	0.991076	0.990967	0.990852	0.990730	0.990603	0.990469
0.97	1.003560	1.003637	1.003708	1.003772	1.003832	1.003885	1.003934
1.00	1.015256	1.015493	1.015724	1.015950	1.016170	1.016385	1.016595
1.03	1.026337	1.026718	1.027094	1.027464	1.027828	1.028187	1.028541
1.06	1.036863	1.037375	1.037881	1.038381	1.038876	1.039365	1.039849
1.09	1.046886	1.047517	1.048141	1.048760	1.049372	1.049979	1.050580
1.12	1.056452	1.057192	1.057924	1.058650	1.059370	1.060084	1.060792
1.15	1.065601	1.066439	1.067271	1.068096	1.068914	1.069726	1.070531
1.18	1.074366	1.075297	1.076219	1.077134	1.078043	1.078944	1.079839
1.21	1.082780	1.083794	1.084801	1.085800	1.086791	1.087776	1.088752
1.24	1.090868	1.091961	1.093046	1.094122	1.095190	1.096251	1.097304
1.27	1.098656	1.099822	1.100978	1.102126	1.103266	1.104397	1.105521
1.30	1.106165	1.107398	1.108622	1.109837	1.111043	1.112241	1.113429
1.33	1.113414	1.114711	1.115998	1.117275	1.118543	1.119802	1.121052
1.36	1.120421	1.121778	1.123124	1.124459	1.125785	1.127101	1.128408
1.39	1.127203	1.128615	1.130016	1.131407	1.132787	1.134157	1.135517
1.42	1.133772	1.135237	1.136690	1.138132	1.139564	1.140985	1.142395
1.45	1.140144	1.141658	1.143160	1.144651	1.146130	1.147599	1.149056
1.48	1.146328	1.147889	1.149438	1.150974	1.152499	1.154013	1.155515
1.51	1.152337	1.153942	1.155535	1.157115	1.158683	1.160239	1.161783

TABLE I. (CONTINUED)

S	T						
	4.15	4.20	4.25	4.30	4.35	4.40	4.45
0.04	I	I	I	I	I	I	I
0.07	I	I	I	I	I	I	I
0.10	I	I	I	I	I	I	I
0.13	I	I	I	I	I	I	I
0.16	I	I	I	I	I	I	I
0.19	I	I	I	I	I	I	I
0.22	I	I	I	I	I	I	I
0.25	I	I	I	I	I	I	I
0.28	I	I	I	I	I	I	I
0.31	I	I	I	I	I	I	I
0.34	I	I	I	I	I	I	I
0.37	I	I	I	I	I	I	I
0.40	I	I	I	I	I	I	I
0.43	I	I	I	I	I	I	I
0.46	I	I	I	I	I	I	I
0.49	I	I	I	I	I	I	I
0.52	0.346460	I	I	I	I	I	I
0.55	0.577298	0.556907	0.533148	0.504269	0.466436	0.407642	I
0.58	0.660226	0.648929	0.636865	0.623902	0.609865	0.594517	0.577524
0.61	0.717483	0.709768	0.701730	0.693336	0.684553	0.675336	0.665636
0.64	0.762207	0.756527	0.750676	0.744644	0.738419	0.731989	0.725340
0.67	0.799175	0.794841	0.790408	0.785870	0.781222	0.776461	0.771581
0.70	0.830764	0.827400	0.823974	0.820483	0.816925	0.813298	0.809601
0.73	0.858364	0.855736	0.853068	0.850357	0.847604	0.844807	0.841965
0.76	0.882872	0.880823	0.878747	0.876643	0.874511	0.872350	0.870159
0.79	0.904905	0.903325	0.901726	0.900107	0.898470	0.896813	0.895136
0.82	0.924910	0.923717	0.922511	0.921291	0.920057	0.918810	0.917549
0.85	0.943223	0.942355	0.941477	0.940590	0.939692	0.938785	0.937868
0.88	0.960102	0.959511	0.958912	0.958306	0.957693	0.957072	0.956444
0.91	0.975750	0.975398	0.975039	0.974675	0.974305	0.973929	0.973547
0.94	0.990330	0.990186	0.990037	0.989882	0.989722	0.989558	0.989389
0.97	1.003977	1.004015	1.004049	1.004078	1.004102	1.004123	1.004138
1.00	1.016800	1.017000	1.017195	1.017387	1.017573	1.017756	1.017935
1.03	1.028891	1.029235	1.029575	1.029910	1.030241	1.030568	1.030891
1.06	1.040327	1.040801	1.041270	1.041735	1.042195	1.042650	1.043102
1.09	1.051176	1.051767	1.052353	1.052934	1.053510	1.054081	1.054648
1.12	1.061494	1.062191	1.062882	1.063568	1.064249	1.064925	1.065597
1.15	1.071330	1.072124	1.072911	1.073693	1.074470	1.075241	1.076006
1.18	1.080727	1.081609	1.082485	1.083354	1.084218	1.085076	1.085928
1.21	1.089722	1.090686	1.091642	1.092592	1.093536	1.094473	1.095404
1.24	1.098349	1.099387	1.100418	1.101442	1.102460	1.103470	1.104474
1.27	1.106636	1.107744	1.108844	1.109936	1.111022	1.112100	1.113171
1.30	1.114610	1.115782	1.116946	1.118102	1.119250	1.120391	1.121525
1.33	1.122292	1.123525	1.124748	1.125964	1.127171	1.128370	1.129561
1.36	1.129706	1.130994	1.132273	1.133544	1.134806	1.136059	1.137304
1.39	1.136867	1.138208	1.139540	1.140862	1.142175	1.143479	1.144775
1.42	1.143795	1.145185	1.146565	1.147936	1.149297	1.150649	1.151992
1.45	1.150503	1.151940	1.153366	1.154782	1.156189	1.157585	1.158973
1.48	1.157006	1.158487	1.159956	1.161415	1.162864	1.164303	1.165732
1.51	1.163316	1.164838	1.166349	1.167848	1.169337	1.170816	1.172284

TABLE I. (CONTINUED)

T S							
	4.50	4.55	4.60	4.65	4.70	4.75	4.80
0.04	I	I	I	I	I	I	I
0.07	I	I	I	I	I	I	I
0.10	I	I	I	I	I	I	I
0.13	I	I	I	I	I	I	I
0.16	I	I	I	I	I	I	I
0.19	I	I	I	I	I	I	I
0.22	I	I	I	I	I	I	I
0.25	I	I	I	I	I	I	I
0.28	I	I	I	I	I	I	I
0.31	I	I	I	I	I	I	I
0.34	I	I	I	I	I	I	I
0.37	I	I	I	I	I	I	I
0.40	I	I	I	I	I	I	I
0.43	I	I	I	I	I	I	I
0.46	I	I	I	I	I	I	I
0.49	I	I	I	I	I	I	I
0.52	I	I	I	I	I	I	I
0.55	I	I	I	I	I	I	I
0.58	0.558388	0.536318	0.509932	0.476418	0.428288	0.321796	I
0.61	0.655391	0.644525	0.632945	0.620529	0.607121	0.592511	0.576403
0.64	0.718454	0.711313	0.703898	0.696182	0.688139	0.679737	0.670937
0.67	0.766576	0.761439	0.756165	0.750744	0.745170	0.739433	0.733522
0.70	0.805830	0.801984	0.798060	0.794054	0.789964	0.785786	0.781517
0.73	0.839078	0.836145	0.833164	0.830134	0.827054	0.823923	0.820739
0.76	0.867940	0.865691	0.863411	0.861101	0.858760	0.856386	0.853981
0.79	0.893440	0.891725	0.889989	0.888234	0.886458	0.884662	0.882845
0.82	0.916275	0.914988	0.913687	0.912373	0.911045	0.909704	0.908350
0.85	0.936942	0.936006	0.935061	0.934107	0.933143	0.932170	0.931188
0.88	0.955809	0.955168	0.954519	0.953864	0.953202	0.952533	0.951858
0.91	0.973160	0.972768	0.972370	0.971967	0.971559	0.971146	0.970729
0.94	0.990215	0.989037	0.988854	0.988667	0.988476	0.988281	0.988082
0.97	1.004150	1.004158	1.004162	1.004162	1.004159	1.004151	1.004141
1.00	1.018109	1.018280	1.018447	1.018611	1.018771	1.018927	1.019081
1.03	1.031209	1.031524	1.031835	1.032143	1.032447	1.032748	1.033045
1.06	1.043549	1.043992	1.044431	1.044867	1.045299	1.045727	1.046151
1.09	1.055210	1.055768	1.056322	1.056872	1.057418	1.057960	1.058498
1.12	1.066263	1.066925	1.067582	1.068235	1.068883	1.069527	1.070168
1.15	1.076767	1.077523	1.078273	1.079019	1.079761	1.080497	1.081230
1.18	1.086774	1.087616	1.088451	1.089282	1.090108	1.090928	1.091744
1.21	1.096330	1.097249	1.098163	1.099071	1.099973	1.100871	1.101763
1.24	1.105472	1.106463	1.107448	1.108427	1.109401	1.110368	1.111330
1.27	1.114235	1.115293	1.116344	1.117389	1.118427	1.119459	1.120485
1.30	1.122651	1.123770	1.124882	1.125987	1.127085	1.128177	1.129262
1.33	1.130745	1.131921	1.133089	1.134251	1.135405	1.136552	1.137692
1.36	1.138541	1.139770	1.140992	1.142205	1.143411	1.144609	1.145801
1.39	1.146062	1.147341	1.148611	1.149873	1.151128	1.152374	1.153613
1.42	1.153326	1.154651	1.155967	1.157275	1.158575	1.159866	1.161150
1.45	1.160350	1.161719	1.163079	1.164430	1.165772	1.167105	1.168430
1.48	1.167151	1.168561	1.169961	1.171352	1.172734	1.174107	1.175472
1.51	1.173743	1.175191	1.176630	1.178059	1.179478	1.180889	1.182290

TABLE I. (CONTINUED)

S	T						
	1.00	1.05	1.10	1.15	1.20	1.25	1.30
1.54	1.026601	1.030350	1.033988	1.037523	1.040963	1.044313	1.047578
1.57	1.029046	1.032879	1.036600	1.040216	1.043735	1.047163	1.050506
1.60	1.031462	1.035377	1.039178	1.042874	1.046471	1.049975	1.053393
1.63	1.033849	1.037844	1.041724	1.045497	1.049170	1.052749	1.056240
1.66	1.036209	1.040283	1.044240	1.048088	1.051834	1.055485	1.059047
1.69	1.038542	1.042692	1.046724	1.050646	1.054464	1.058186	1.061817
1.72	1.040848	1.045074	1.049179	1.053172	1.057061	1.060852	1.064550
1.75	1.043129	1.047428	1.051605	1.055668	1.059626	1.063483	1.067248
1.78	1.045385	1.049756	1.054003	1.058134	1.062159	1.066082	1.069910
1.81	1.047616	1.052057	1.056373	1.060571	1.064661	1.068648	1.072539
1.84	1.049824	1.054333	1.058716	1.062980	1.067133	1.071183	1.075135
1.87	1.052008	1.056584	1.061032	1.065361	1.069576	1.073687	1.077698
1.90	1.054169	1.058811	1.063324	1.067714	1.071991	1.076161	1.080231
1.93	1.056307	1.061014	1.065590	1.070041	1.074378	1.078606	1.082733
1.96	1.058424	1.063194	1.067831	1.072343	1.076738	1.081023	1.085205
1.99	1.060519	1.065352	1.070049	1.074619	1.079071	1.083412	1.087648
2.02	1.062594	1.067487	1.072243	1.076870	1.081378	1.085774	1.090063
2.05	1.064648	1.069600	1.074414	1.079098	1.083661	1.088109	1.092451
2.08	1.066681	1.071692	1.076563	1.081302	1.085918	1.090419	1.094811
2.11	1.068695	1.073763	1.078690	1.083483	1.088152	1.092704	1.097146
2.14	1.070690	1.075814	1.080795	1.085641	1.090362	1.094964	1.099454
2.17	1.072666	1.077845	1.082879	1.087778	1.092548	1.097199	1.101738
2.20	1.074623	1.079857	1.084943	1.089893	1.094713	1.099412	1.103997
2.23	1.076562	1.081849	1.086987	1.091986	1.096855	1.101601	1.106232
2.26	1.078483	1.083823	1.089011	1.094059	1.098976	1.103768	1.108444
2.29	1.080387	1.085778	1.091016	1.096112	1.101075	1.105913	1.110633
2.32	1.082274	1.087715	1.093002	1.098146	1.103154	1.108036	1.112799
2.35	1.084143	1.089634	1.094970	1.100159	1.105213	1.110139	1.114944
2.38	1.085997	1.091536	1.096919	1.102154	1.107252	1.112221	1.117067
2.41	1.087834	1.093422	1.098850	1.104130	1.109272	1.114282	1.119169
2.44	1.089655	1.095290	1.100764	1.106088	1.111272	1.116324	1.121251
2.47	1.091461	1.097142	1.102661	1.108029	1.113254	1.118346	1.123313
2.50	1.093252	1.098978	1.104541	1.109951	1.115218	1.120350	1.125355
2.53	1.095027	1.100799	1.106405	1.111856	1.117164	1.122335	1.127378
2.56	1.096788	1.102603	1.108252	1.113745	1.119092	1.124301	1.129382
2.59	1.098534	1.104393	1.110084	1.115617	1.121003	1.126250	1.131367
2.62	1.100266	1.106168	1.111900	1.117473	1.122897	1.128181	1.133334
2.65	1.101984	1.107928	1.113700	1.119313	1.124775	1.130096	1.135284
2.68	1.103689	1.109674	1.115486	1.121137	1.126636	1.131993	1.137216
2.71	1.105379	1.111405	1.117257	1.122946	1.128481	1.133874	1.139131
2.74	1.107057	1.113123	1.119013	1.124739	1.130311	1.135738	1.141029
2.77	1.108721	1.114827	1.120756	1.126518	1.132125	1.137587	1.142910
2.80	1.110373	1.116518	1.122484	1.128283	1.133925	1.139420	1.144776
2.83	1.112012	1.118195	1.124198	1.130033	1.135709	1.141237	1.146626
2.86	1.113639	1.119860	1.125899	1.131769	1.137479	1.143040	1.148460
2.89	1.115253	1.121512	1.127587	1.133491	1.139235	1.144828	1.150279
2.92	1.116855	1.123151	1.129262	1.135200	1.140976	1.146601	1.152082
2.95	1.118446	1.124778	1.130924	1.136895	1.142704	1.148360	1.153872
2.98	1.120025	1.126393	1.132573	1.138578	1.144418	1.150105	1.155646
3.01	1.121592	1.127996	1.134210	1.140247	1.146119	1.151836	1.157407

TABLE I. (CONTINUED)

S	T						
	1.35	1.40	1.45	1.50	1.55	1.60	1.65
1.54	1.050765	1.053878	1.056921	1.059898	1.062813	1.065668	1.068468
1.57	1.053769	1.056956	1.060073	1.063122	1.066108	1.069034	1.071903
1.60	1.056729	1.059989	1.063177	1.066297	1.069352	1.072345	1.075281
1.63	1.059648	1.062978	1.066235	1.069423	1.072545	1.075605	1.078605
1.66	1.062525	1.065924	1.069248	1.072502	1.075689	1.078813	1.081876
1.69	1.065363	1.068829	1.072218	1.075536	1.078787	1.081972	1.085097
1.72	1.068162	1.071693	1.075146	1.078527	1.081838	1.085084	1.088268
1.75	1.070924	1.074518	1.078033	1.081474	1.084845	1.088150	1.091391
1.78	1.073650	1.077305	1.080880	1.084381	1.087810	1.091171	1.094468
1.81	1.076339	1.080054	1.083689	1.087247	1.090732	1.094149	1.097500
1.84	1.078995	1.082768	1.086460	1.090074	1.093614	1.097085	1.100489
1.87	1.081617	1.085447	1.089195	1.092863	1.096457	1.099980	1.103435
1.90	1.084206	1.088092	1.091894	1.095616	1.099261	1.102835	1.106340
1.93	1.086764	1.090704	1.094559	1.098332	1.102029	1.105652	1.109206
1.96	1.089290	1.093283	1.097190	1.101014	1.104760	1.108432	1.112033
1.99	1.091786	1.095831	1.099788	1.103662	1.107456	1.111175	1.114823
2.02	1.094253	1.098349	1.102355	1.106277	1.110118	1.113883	1.117576
2.05	1.096691	1.100836	1.104891	1.108859	1.112747	1.116557	1.120293
2.08	1.099101	1.103294	1.107396	1.111411	1.115343	1.119197	1.122976
2.11	1.101484	1.105724	1.109872	1.113932	1.117908	1.121805	1.125626
2.14	1.103840	1.108127	1.112319	1.116423	1.120442	1.124380	1.128242
2.17	1.106170	1.110502	1.114738	1.118885	1.122946	1.126925	1.130827
2.20	1.108474	1.112850	1.117130	1.121319	1.125421	1.129440	1.133381
2.23	1.110754	1.115173	1.119495	1.123725	1.127867	1.131926	1.135905
2.26	1.113010	1.117471	1.121835	1.126104	1.130286	1.134382	1.138399
2.29	1.115241	1.119745	1.124148	1.128458	1.132677	1.136811	1.140864
2.32	1.117450	1.121994	1.126437	1.130785	1.135042	1.139213	1.143301
2.35	1.119635	1.124219	1.128702	1.133087	1.137381	1.141588	1.145711
2.38	1.121799	1.126422	1.130942	1.135365	1.139695	1.143937	1.148094
2.41	1.123941	1.128602	1.133160	1.137619	1.141984	1.146260	1.150451
2.44	1.126061	1.130761	1.135355	1.139849	1.144249	1.148559	1.152783
2.47	1.128161	1.132897	1.137527	1.142057	1.146491	1.150834	1.155070
2.50	1.130241	1.135013	1.139678	1.144242	1.148709	1.153085	1.157372
2.53	1.132300	1.137108	1.141808	1.146405	1.150905	1.155312	1.159631
2.56	1.134340	1.139183	1.143917	1.148547	1.153079	1.157517	1.161866
2.59	1.136361	1.141238	1.146005	1.150668	1.155232	1.159700	1.164079
2.62	1.138363	1.143274	1.148074	1.152769	1.157363	1.161862	1.166270
2.65	1.140346	1.145291	1.150123	1.154849	1.159473	1.164002	1.168438
2.68	1.142312	1.147289	1.152153	1.156909	1.161564	1.166121	1.170586
2.71	1.144260	1.149269	1.154164	1.158951	1.163634	1.168220	1.172713
2.74	1.146191	1.151231	1.156157	1.160973	1.165685	1.170299	1.174819
2.77	1.148105	1.153176	1.158132	1.162977	1.167718	1.172359	1.176905
2.80	1.150002	1.155104	1.160089	1.164963	1.169731	1.174399	1.178972
2.83	1.151882	1.157014	1.162028	1.166930	1.171726	1.176421	1.181020
2.86	1.153747	1.158908	1.163951	1.168881	1.173704	1.178425	1.183049
2.89	1.155596	1.160786	1.165857	1.170814	1.175664	1.180410	1.185059
2.92	1.157429	1.162648	1.167747	1.172731	1.177606	1.182378	1.187051
2.95	1.159247	1.164495	1.169620	1.174631	1.179532	1.184329	1.189026
2.98	1.161051	1.166326	1.171478	1.176515	1.181441	1.186262	1.190983
3.01	1.162839	1.168142	1.173321	1.178383	1.183334	1.188179	1.192924

TABLE I. (CONTINUED)

T S							
	1.70	1.75	1.80	1.85	1.90	1.95	2.00
1.54	1.071215	1.073911	1.076558	1.079160	1.081719	1.084235	1.086711
1.57	1.074717	1.077481	1.080195	1.082862	1.085484	1.088064	1.090603
1.60	1.078162	1.080990	1.083768	1.086498	1.089183	1.091823	1.094422
1.63	1.081550	1.084440	1.087280	1.090071	1.092816	1.095516	1.098173
1.66	1.084883	1.087834	1.090734	1.093584	1.096387	1.099144	1.101857
1.69	1.088163	1.091174	1.094131	1.097038	1.099897	1.102709	1.105477
1.72	1.091392	1.094460	1.097474	1.100436	1.103349	1.106214	1.109035
1.75	1.094572	1.097695	1.100763	1.103779	1.106744	1.109662	1.112533
1.78	1.097703	1.100880	1.104002	1.107069	1.110086	1.113053	1.115974
1.81	1.100789	1.104018	1.107190	1.110308	1.113374	1.116390	1.119359
1.84	1.103829	1.107109	1.110331	1.113498	1.116612	1.119675	1.122690
1.87	1.106826	1.110155	1.113426	1.116640	1.119801	1.122909	1.125969
1.90	1.109780	1.113157	1.116475	1.119736	1.122941	1.126095	1.129198
1.93	1.112693	1.116117	1.119481	1.122786	1.126036	1.129232	1.132378
1.96	1.115567	1.119036	1.122444	1.125793	1.129086	1.132324	1.135511
1.99	1.118402	1.121915	1.125367	1.128758	1.132092	1.135371	1.138598
2.02	1.121199	1.124756	1.128249	1.131682	1.135056	1.138375	1.141641
2.05	1.123959	1.127558	1.131093	1.134566	1.137980	1.141337	1.144641
2.08	1.126684	1.130324	1.133899	1.137411	1.140864	1.144259	1.147599
2.11	1.129374	1.133054	1.136668	1.140219	1.143709	1.147141	1.150517
2.14	1.132031	1.135750	1.139402	1.142990	1.146516	1.149984	1.153395
2.17	1.134655	1.138412	1.142101	1.145725	1.149288	1.152790	1.156235
2.20	1.137247	1.141041	1.144767	1.148426	1.152023	1.155560	1.159039
2.23	1.139808	1.143638	1.147399	1.151094	1.154725	1.158295	1.161806
2.26	1.142338	1.146204	1.150000	1.153729	1.157393	1.160995	1.164538
2.29	1.144839	1.148740	1.152570	1.156331	1.160028	1.163662	1.167235
2.32	1.147311	1.151246	1.155109	1.158903	1.162631	1.166296	1.169900
2.35	1.149755	1.153723	1.157618	1.161444	1.165204	1.168899	1.172532
2.38	1.152172	1.156172	1.160099	1.163956	1.167746	1.171470	1.175133
2.41	1.154561	1.158594	1.162552	1.166439	1.170258	1.174012	1.177703
2.44	1.156925	1.160989	1.164977	1.168894	1.172742	1.176525	1.180243
2.47	1.159263	1.163357	1.167376	1.171322	1.175199	1.179008	1.182754
2.50	1.161576	1.165701	1.169748	1.173723	1.177627	1.181464	1.185236
2.53	1.163865	1.168019	1.172095	1.176098	1.180029	1.183893	1.187691
2.56	1.166130	1.170313	1.174417	1.178447	1.182405	1.186295	1.190119
2.59	1.168372	1.172583	1.176715	1.180771	1.184756	1.188671	1.192520
2.62	1.170591	1.174829	1.178988	1.183071	1.187082	1.191022	1.194895
2.65	1.172788	1.177053	1.181239	1.185347	1.189383	1.193348	1.197245
2.68	1.174962	1.179255	1.183466	1.187600	1.191661	1.195650	1.199570
2.71	1.177116	1.181435	1.185672	1.189831	1.193915	1.197928	1.201872
2.74	1.179249	1.183593	1.187855	1.192039	1.196147	1.200183	1.204149
2.77	1.181361	1.185731	1.190017	1.194225	1.198357	1.202415	1.206404
2.80	1.183453	1.187848	1.192159	1.196390	1.200544	1.204626	1.208636
2.83	1.185526	1.189945	1.194280	1.198534	1.202711	1.206814	1.210846
2.86	1.187580	1.192022	1.196380	1.200657	1.204857	1.208982	1.213035
2.89	1.189614	1.194081	1.198462	1.202761	1.206982	1.211128	1.215202
2.92	1.191631	1.196120	1.200524	1.204845	1.209088	1.213255	1.217349
2.95	1.193629	1.198141	1.202567	1.206910	1.211174	1.215361	1.219476
2.98	1.195609	1.200144	1.204592	1.208956	1.213241	1.217448	1.221582
3.01	1.197572	1.202129	1.206599	1.210984	1.215289	1.219516	1.223670

TABLE I. (CONTINUED)

S	T						
	2.05	2.10	2.15	2.20	2.25	2.30	2.35
1.54	1.089149	1.091550	1.093915	1.096246	1.098545	1.100812	1.103049
1.57	1.093102	1.095564	1.097989	1.100380	1.102737	1.105062	1.107356
1.60	1.096981	1.099502	1.101985	1.104433	1.106846	1.109226	1.111575
1.63	1.100789	1.103366	1.105905	1.108408	1.110875	1.113309	1.115710
1.66	1.104529	1.107160	1.109753	1.112308	1.114828	1.117313	1.119765
1.69	1.108202	1.110886	1.113530	1.116137	1.118707	1.121242	1.123742
1.72	1.111812	1.114546	1.117241	1.119897	1.122515	1.125098	1.127646
1.75	1.115360	1.118144	1.120887	1.123591	1.126256	1.128885	1.131478
1.78	1.118849	1.121681	1.124470	1.127220	1.129931	1.132604	1.135241
1.81	1.122281	1.125159	1.127994	1.130788	1.133543	1.136259	1.138938
1.84	1.125657	1.128580	1.131459	1.134296	1.137093	1.139852	1.142572
1.87	1.128981	1.131946	1.134868	1.137747	1.140585	1.143384	1.146144
1.90	1.132252	1.135260	1.138223	1.141143	1.144021	1.146858	1.149657
1.93	1.135474	1.138522	1.141525	1.144485	1.147401	1.150277	1.153113
1.96	1.138647	1.141735	1.144777	1.147775	1.150729	1.153641	1.156514
1.99	1.141773	1.144900	1.147980	1.151014	1.154005	1.156953	1.159861
2.02	1.144855	1.148019	1.151135	1.154206	1.157232	1.160215	1.163156
2.05	1.147892	1.151092	1.154244	1.157350	1.160410	1.163427	1.166409
2.08	1.150886	1.154122	1.157309	1.160448	1.163542	1.166592	1.169592
2.11	1.153839	1.157109	1.160330	1.163503	1.166629	1.169711	1.172749
2.14	1.156752	1.160056	1.163310	1.166515	1.169673	1.172785	1.175854
2.17	1.159625	1.162962	1.166248	1.169485	1.172673	1.175816	1.178915
2.20	1.162461	1.165830	1.169147	1.172414	1.175633	1.178806	1.181933
2.23	1.165260	1.168660	1.172008	1.175305	1.178553	1.181754	1.184910
2.26	1.168023	1.171454	1.174831	1.178157	1.181434	1.184663	1.187846
2.29	1.170751	1.174211	1.177618	1.180973	1.184277	1.187534	1.190744
2.32	1.173446	1.176935	1.180370	1.183752	1.187084	1.190367	1.193603
2.35	1.176107	1.179624	1.183087	1.186497	1.189855	1.193164	1.196426
2.38	1.178736	1.182281	1.185771	1.189207	1.192592	1.195926	1.199213
2.41	1.181334	1.184906	1.188422	1.191884	1.195294	1.198654	1.201965
2.44	1.183901	1.187499	1.191042	1.194529	1.197964	1.201348	1.204683
2.47	1.186438	1.190063	1.193630	1.197143	1.200602	1.204010	1.207368
2.50	1.188946	1.192597	1.196189	1.199725	1.203208	1.206639	1.210020
2.53	1.191427	1.195101	1.198718	1.202278	1.205785	1.209238	1.212642
2.56	1.193879	1.197578	1.201219	1.204802	1.208331	1.211807	1.215233
2.59	1.196304	1.200028	1.203691	1.207298	1.210849	1.214347	1.217794
2.62	1.198704	1.202450	1.206137	1.209766	1.213339	1.216858	1.220326
2.65	1.201077	1.204847	1.208555	1.212206	1.215801	1.219341	1.222829
2.68	1.203425	1.207217	1.210948	1.214621	1.218236	1.221797	1.225305
2.71	1.205749	1.209563	1.213316	1.217009	1.220645	1.224226	1.227754
2.74	1.208049	1.211885	1.215658	1.219372	1.223029	1.226630	1.230177
2.77	1.210326	1.214182	1.217977	1.221711	1.225387	1.229008	1.232574
2.80	1.212579	1.216457	1.220271	1.224026	1.227721	1.231361	1.234946
2.83	1.214810	1.218708	1.222543	1.226317	1.230032	1.233690	1.237293
2.86	1.217019	1.220937	1.224792	1.228585	1.232318	1.235995	1.239616
2.89	1.219207	1.223145	1.227019	1.230830	1.234583	1.238277	1.241916
2.92	1.221374	1.225331	1.229224	1.233054	1.236824	1.240536	1.244193
2.95	1.223520	1.227496	1.231408	1.235256	1.239044	1.242774	1.246447
2.98	1.225646	1.229641	1.233571	1.237437	1.241243	1.244989	1.248679
3.01	1.227752	1.231766	1.235713	1.239597	1.243420	1.247184	1.250890

TABLE I. (CONTINUED)

S	T						
	2.40	2.45	2.50	2.55	2.60	2.65	2.70
1.54	1.105257	1.107436	1.109588	1.111714	1.113814	1.115889	1.117941
1.57	1.109620	1.111854	1.114061	1.116241	1.118394	1.120522	1.122626
1.60	1.113893	1.116181	1.118440	1.120671	1.122876	1.125055	1.127208
1.63	1.118080	1.120419	1.122729	1.125010	1.127264	1.129491	1.131692
1.66	1.122184	1.124573	1.126931	1.129260	1.131561	1.133835	1.136082
1.69	1.126210	1.128646	1.131051	1.133426	1.135773	1.138091	1.140382
1.72	1.130160	1.132641	1.135091	1.137511	1.139901	1.142263	1.144597
1.75	1.134037	1.136562	1.139056	1.141518	1.143950	1.146354	1.148728
1.78	1.137843	1.140411	1.142947	1.145451	1.147923	1.150367	1.152781
1.81	1.141582	1.144192	1.146767	1.149311	1.151823	1.154305	1.156757
1.84	1.145256	1.147905	1.150520	1.153102	1.155652	1.158172	1.160660
1.87	1.148868	1.151555	1.154208	1.156827	1.159414	1.161969	1.164493
1.90	1.152418	1.155143	1.157833	1.160488	1.163110	1.165700	1.168259
1.93	1.155911	1.158672	1.161397	1.164087	1.166743	1.169367	1.171959
1.96	1.159347	1.162143	1.164902	1.167626	1.170316	1.172972	1.175596
1.99	1.162729	1.165558	1.168351	1.171108	1.173830	1.176518	1.179173
2.02	1.166058	1.168920	1.171745	1.174534	1.177287	1.180006	1.182691
2.05	1.169336	1.172230	1.175087	1.177906	1.180689	1.183438	1.186153
2.08	1.172564	1.175490	1.178377	1.181226	1.184039	1.186817	1.189560
2.11	1.175745	1.178701	1.181618	1.184496	1.187338	1.190144	1.192915
2.14	1.178880	1.181865	1.184811	1.187718	1.190587	1.193421	1.196219
2.17	1.181970	1.184984	1.187958	1.190892	1.193789	1.196649	1.199473
2.20	1.185017	1.188058	1.191059	1.194021	1.196944	1.199829	1.202679
2.23	1.188021	1.191090	1.194118	1.197105	1.200054	1.202965	1.205839
2.26	1.190985	1.194080	1.197134	1.200146	1.203120	1.206056	1.208954
2.29	1.193909	1.197030	1.200108	1.203146	1.206144	1.209104	1.212026
2.32	1.196794	1.199940	1.203044	1.206106	1.209127	1.212110	1.215055
2.35	1.199641	1.202812	1.205940	1.209026	1.212071	1.215076	1.218044
2.38	1.202453	1.205648	1.208799	1.211908	1.214975	1.218003	1.220993
2.41	1.205229	1.208447	1.211621	1.214752	1.217842	1.220892	1.223903
2.44	1.207970	1.211211	1.214408	1.217561	1.220673	1.223744	1.226775
2.47	1.210678	1.213941	1.217160	1.220335	1.223467	1.226559	1.229611
2.50	1.213353	1.216638	1.219878	1.223074	1.226228	1.229340	1.232411
2.53	1.215996	1.219303	1.222564	1.225781	1.228954	1.232086	1.235177
2.56	1.218608	1.221936	1.225218	1.228455	1.231648	1.234799	1.237909
2.59	1.221190	1.224539	1.227840	1.231097	1.234310	1.237480	1.240609
2.62	1.223743	1.227111	1.230433	1.233709	1.236940	1.240129	1.243276
2.65	1.226266	1.229655	1.232996	1.236290	1.239541	1.242748	1.245913
2.68	1.228762	1.232170	1.235529	1.238843	1.242111	1.245336	1.248519
2.71	1.231231	1.234657	1.238035	1.241367	1.244653	1.247896	1.251095
2.74	1.233672	1.237117	1.240514	1.243863	1.247167	1.250427	1.253643
2.77	1.236088	1.239551	1.242965	1.246332	1.249653	1.252930	1.256163
2.80	1.238478	1.241959	1.245391	1.248775	1.252113	1.255406	1.258655
2.83	1.240843	1.244342	1.247791	1.251192	1.254546	1.257855	1.261120
2.86	1.243184	1.246700	1.250166	1.253583	1.256954	1.260279	1.263560
2.89	1.245501	1.249034	1.252516	1.255950	1.259336	1.262677	1.265973
2.92	1.247795	1.251344	1.254843	1.258293	1.261695	1.265051	1.268362
2.95	1.250066	1.253631	1.257146	1.260612	1.264029	1.267400	1.270726
2.98	1.252314	1.255896	1.259427	1.262908	1.266340	1.269726	1.273067
3.01	1.254541	1.258139	1.261685	1.265181	1.268628	1.272029	1.275384

TABLE I. (CONTINUED)

S	T						
	2.75	2.80	2.85	2.90	2.95	3.00	3.05
1.54	1.119969	1.121975	1.123958	1.125921	1.127863	1.129784	1.131687
1.57	1.124705	1.126762	1.128790	1.130808	1.132798	1.134768	1.136718
1.60	1.129337	1.131442	1.133524	1.135583	1.137621	1.139637	1.141633
1.63	1.133868	1.136019	1.138147	1.140252	1.142335	1.144395	1.146435
1.66	1.138303	1.140500	1.142672	1.144820	1.146946	1.149049	1.151130
1.69	1.142647	1.144887	1.147101	1.149291	1.151458	1.153602	1.155723
1.72	1.146903	1.149184	1.151439	1.153670	1.155876	1.158059	1.160219
1.75	1.151075	1.153396	1.155690	1.157959	1.160204	1.162424	1.164622
1.78	1.155167	1.157525	1.159858	1.162164	1.164445	1.166702	1.168935
1.81	1.159181	1.161576	1.163945	1.166287	1.168604	1.170895	1.173163
1.84	1.163120	1.165552	1.167955	1.170332	1.172683	1.175008	1.177308
1.87	1.166988	1.169454	1.171892	1.174302	1.176685	1.179043	1.181376
1.90	1.170787	1.173286	1.175757	1.178199	1.180615	1.183004	1.185367
1.93	1.174520	1.177051	1.179554	1.182027	1.184473	1.186893	1.189286
1.96	1.178189	1.180752	1.183284	1.185788	1.188264	1.190713	1.193135
1.99	1.181797	1.184389	1.186952	1.189485	1.191990	1.194467	1.196917
2.02	1.185345	1.187967	1.190558	1.193119	1.195652	1.198157	1.200634
2.05	1.188835	1.191486	1.194105	1.196694	1.199254	1.201785	1.204288
2.08	1.192271	1.194948	1.197595	1.200211	1.202797	1.205353	1.207882
2.11	1.195652	1.198357	1.201030	1.203671	1.206283	1.208865	1.211418
2.14	1.198982	1.201713	1.204411	1.207078	1.209714	1.212321	1.214898
2.17	1.202262	1.205018	1.207741	1.210433	1.213093	1.215723	1.218324
2.20	1.205494	1.208274	1.211021	1.213737	1.216420	1.219073	1.221697
2.23	1.208678	1.211483	1.214253	1.216992	1.219698	1.222374	1.225019
2.26	1.211817	1.214645	1.217439	1.220199	1.222928	1.225625	1.228292
2.29	1.214912	1.217762	1.220578	1.223361	1.226111	1.228830	1.231518
2.32	1.217964	1.220836	1.223674	1.226478	1.229250	1.231989	1.234697
2.35	1.220974	1.223869	1.226728	1.229553	1.232344	1.235104	1.237832
2.38	1.223944	1.226860	1.229740	1.232585	1.235397	1.238176	1.240923
2.41	1.226875	1.229811	1.232711	1.235577	1.238408	1.241206	1.243973
2.44	1.229768	1.232724	1.235644	1.238529	1.241379	1.244196	1.246981
2.47	1.232624	1.235600	1.238539	1.241443	1.244312	1.247147	1.249950
2.50	1.235444	1.238439	1.241397	1.244319	1.247207	1.250060	1.252880
2.53	1.238229	1.241243	1.244219	1.247160	1.250065	1.252936	1.255773
2.56	1.240980	1.244012	1.247006	1.249965	1.252887	1.255775	1.258630
2.59	1.243698	1.246748	1.249760	1.252735	1.255675	1.258580	1.261451
2.62	1.246383	1.249451	1.252480	1.255473	1.258429	1.261350	1.264237
2.65	1.249037	1.252122	1.255168	1.258177	1.261150	1.264087	1.266990
2.68	1.251660	1.254762	1.257825	1.260850	1.263839	1.266792	1.269710
2.71	1.254254	1.257372	1.260451	1.263493	1.266497	1.269465	1.272399
2.74	1.256818	1.259953	1.263048	1.266105	1.269124	1.272108	1.275056
2.77	1.259354	1.262504	1.265615	1.268687	1.271722	1.274721	1.277684
2.80	1.261862	1.265028	1.268154	1.271241	1.274291	1.277304	1.280281
2.83	1.264343	1.267524	1.270666	1.273768	1.276832	1.279859	1.282850
2.86	1.266798	1.269994	1.273150	1.276266	1.279345	1.282386	1.285391
2.89	1.269226	1.272437	1.275608	1.278739	1.281831	1.284886	1.287904
2.92	1.271630	1.274855	1.278040	1.281185	1.284291	1.287359	1.290391
2.95	1.274009	1.277248	1.280447	1.283606	1.286725	1.289807	1.292852
2.98	1.276363	1.279617	1.282829	1.286001	1.289134	1.292229	1.295287
3.01	1.278694	1.281962	1.285188	1.288373	1.291519	1.294626	1.297697

TABLE 1. (CONTINUED)

S	T						
	3.10	3.15	3.20	3.25	3.30	3.35	3.40
1.54	1.133570	1.135434	1.137281	1.139110	1.140922	1.142717	1.144496
1.57	1.138649	1.140560	1.142453	1.144328	1.146184	1.148024	1.149847
1.60	1.143608	1.145564	1.147501	1.149419	1.151319	1.153201	1.155066
1.63	1.148453	1.150452	1.152431	1.154391	1.156332	1.158255	1.160160
1.66	1.153190	1.155230	1.157249	1.159248	1.161229	1.163191	1.165134
1.69	1.157823	1.159902	1.161960	1.163997	1.166015	1.168014	1.169995
1.72	1.162357	1.164473	1.166568	1.168643	1.170697	1.172731	1.174747
1.75	1.166796	1.168948	1.171079	1.173189	1.175278	1.177347	1.179396
1.78	1.171145	1.173332	1.175497	1.177640	1.179762	1.181864	1.183946
1.81	1.175406	1.177627	1.179825	1.182001	1.184155	1.186289	1.188402
1.84	1.179585	1.181837	1.184067	1.186274	1.188460	1.190624	1.192767
1.87	1.183683	1.185967	1.188228	1.190465	1.192680	1.194874	1.197046
1.90	1.187705	1.190019	1.192309	1.194576	1.196820	1.199042	1.201242
1.93	1.191654	1.193996	1.196315	1.198610	1.200882	1.203131	1.205358
1.96	1.195531	1.197902	1.200248	1.202570	1.204869	1.207144	1.209398
1.99	1.199340	1.201738	1.204111	1.206460	1.208784	1.211085	1.213364
2.02	1.203084	1.205508	1.207907	1.210281	1.212630	1.214956	1.217259
2.05	1.206764	1.209214	1.211638	1.214036	1.216410	1.218760	1.221087
2.08	1.210383	1.212858	1.215306	1.217728	1.220126	1.222499	1.224849
2.11	1.213944	1.216442	1.218914	1.221359	1.223780	1.226176	1.228548
2.14	1.217447	1.219969	1.222463	1.224932	1.227374	1.229792	1.232185
2.17	1.220896	1.223440	1.225957	1.228447	1.230911	1.233350	1.235764
2.20	1.224291	1.226857	1.229396	1.231907	1.234392	1.236852	1.239287
2.23	1.227635	1.230222	1.232782	1.235314	1.237820	1.240300	1.242754
2.26	1.230929	1.233538	1.236118	1.238670	1.241196	1.243695	1.246169
2.29	1.234175	1.236804	1.239404	1.241976	1.244521	1.247039	1.249532
2.32	1.237375	1.240023	1.242642	1.245234	1.247797	1.250334	1.252845
2.35	1.240529	1.243197	1.245835	1.248445	1.251027	1.253582	1.256110
2.38	1.243640	1.246326	1.248983	1.251611	1.254211	1.256783	1.259329
2.41	1.246708	1.249412	1.252087	1.254733	1.257350	1.259940	1.262503
2.44	1.249734	1.252457	1.255149	1.257812	1.260446	1.263053	1.265632
2.47	1.252721	1.255461	1.258170	1.260850	1.263501	1.266124	1.268720
2.50	1.255669	1.258425	1.261152	1.263848	1.266515	1.269154	1.271766
2.53	1.258578	1.261352	1.264094	1.266807	1.269490	1.272145	1.274772
2.56	1.261451	1.264241	1.266700	1.269728	1.272427	1.275097	1.277739
2.59	1.264289	1.267094	1.269869	1.272612	1.275326	1.278011	1.280668
2.62	1.267091	1.269912	1.272702	1.275461	1.278190	1.280889	1.283560
2.65	1.269859	1.272696	1.275501	1.278275	1.281018	1.283732	1.286417
2.68	1.272595	1.275447	1.278266	1.281054	1.283812	1.286540	1.289239
2.71	1.275298	1.278165	1.280998	1.283801	1.286572	1.289314	1.292026
2.74	1.277970	1.280851	1.283699	1.286515	1.289301	1.292056	1.294781
2.77	1.280612	1.283507	1.286368	1.289198	1.291997	1.294765	1.297504
2.80	1.283224	1.286132	1.289008	1.291851	1.294663	1.297444	1.300195
2.83	1.285806	1.288728	1.291617	1.294474	1.297298	1.300092	1.302856
2.86	1.288361	1.291296	1.294198	1.297067	1.299905	1.302711	1.305487
2.89	1.290887	1.293836	1.296751	1.299632	1.302482	1.305301	1.308089
2.92	1.293387	1.296348	1.299276	1.302170	1.305032	1.307863	1.310663
2.95	1.295860	1.298834	1.301774	1.304680	1.307555	1.310397	1.313209
2.98	1.298308	1.301294	1.304246	1.307165	1.310050	1.312905	1.315728
3.01	1.300730	1.303729	1.306693	1.309623	1.312520	1.315386	1.318220

TABLE I. (CONTINUED)

S	τ						
	3.45	3.50	3.55	3.60	3.65	3.70	3.75
1.54	1.146258	1.148006	1.149738	1.151455	1.153157	1.154845	1.156520
1.57	1.151653	1.153444	1.155218	1.156977	1.158722	1.160451	1.162166
1.60	1.156914	1.158745	1.160561	1.162360	1.164144	1.165913	1.167667
1.63	1.162047	1.163918	1.165772	1.167610	1.169431	1.171238	1.173029
1.66	1.167060	1.168968	1.170859	1.172733	1.174591	1.176433	1.178259
1.69	1.171957	1.173900	1.175827	1.177736	1.179629	1.181505	1.183365
1.72	1.176744	1.178722	1.180682	1.182625	1.184551	1.186460	1.188353
1.75	1.181426	1.183437	1.185430	1.187405	1.189363	1.191303	1.193227
1.78	1.186008	1.188051	1.190076	1.192082	1.194070	1.196040	1.197993
1.81	1.190495	1.192568	1.194623	1.196658	1.198676	1.200675	1.202657
1.84	1.194890	1.196993	1.199076	1.201140	1.203186	1.205213	1.207223
1.87	1.199197	1.201328	1.203440	1.205531	1.207604	1.209658	1.211694
1.90	1.203421	1.205579	1.207717	1.209835	1.211934	1.214014	1.216076
1.93	1.207564	1.209748	1.211912	1.214056	1.216180	1.218285	1.220371
1.96	1.211629	1.213839	1.216028	1.218197	1.220345	1.222474	1.224584
1.99	1.215620	1.217855	1.220068	1.222260	1.224433	1.226585	1.228717
2.02	1.219540	1.221798	1.224035	1.226250	1.228445	1.230620	1.232775
2.05	1.223391	1.225672	1.227931	1.230169	1.232386	1.234583	1.236759
2.08	1.227175	1.229479	1.231760	1.234020	1.236258	1.238476	1.240673
2.11	1.230896	1.233221	1.235524	1.237804	1.240063	1.242301	1.244519
2.14	1.234555	1.236901	1.239224	1.241525	1.243805	1.246062	1.248299
2.17	1.238155	1.240521	1.242864	1.245185	1.247484	1.249761	1.252017
2.20	1.241697	1.244083	1.246446	1.248786	1.251104	1.253400	1.255674
2.23	1.245184	1.247589	1.249971	1.252330	1.254666	1.256980	1.259272
2.26	1.248617	1.251041	1.253442	1.255819	1.258173	1.260504	1.262814
2.29	1.251999	1.254441	1.256859	1.259254	1.261626	1.263974	1.266301
2.32	1.255330	1.257790	1.260226	1.262638	1.265026	1.267392	1.269735
2.35	1.258613	1.261090	1.263543	1.265972	1.268377	1.270759	1.273118
2.38	1.261849	1.264343	1.266812	1.269257	1.271679	1.274077	1.276452
2.41	1.265039	1.267550	1.270035	1.272496	1.274933	1.277347	1.279737
2.44	1.268185	1.270712	1.273213	1.275690	1.278142	1.280571	1.282976
2.47	1.271288	1.273831	1.276347	1.278839	1.281306	1.283750	1.286170
2.50	1.274350	1.276907	1.279439	1.281946	1.284428	1.286886	1.289320
2.53	1.277371	1.279944	1.282490	1.285011	1.287507	1.289979	1.292427
2.56	1.280353	1.282940	1.285501	1.288036	1.290547	1.293032	1.295494
2.59	1.283296	1.285898	1.288473	1.291022	1.293546	1.296045	1.298520
2.62	1.286203	1.288819	1.291407	1.293970	1.296507	1.299020	1.301508
2.65	1.289074	1.291703	1.294305	1.296881	1.299432	1.301957	1.304457
2.68	1.291909	1.294552	1.297167	1.299756	1.302319	1.304857	1.307370
2.71	1.294710	1.297366	1.299994	1.302596	1.305172	1.307722	1.310248
2.74	1.297478	1.300147	1.302788	1.305402	1.307990	1.310553	1.313090
2.77	1.300214	1.302895	1.305548	1.308175	1.310775	1.313350	1.315899
2.80	1.302918	1.305611	1.308277	1.310916	1.313528	1.316114	1.318674
2.83	1.305591	1.308296	1.310974	1.313625	1.316248	1.318846	1.321417
2.86	1.308234	1.310951	1.313641	1.316303	1.318938	1.321547	1.324129
2.89	1.310848	1.313577	1.316278	1.318951	1.321597	1.324217	1.326811
2.92	1.313433	1.316174	1.318886	1.321570	1.324228	1.326858	1.329463
2.95	1.315990	1.318742	1.321466	1.324161	1.326829	1.329470	1.332085
2.98	1.318520	1.321284	1.324018	1.326724	1.329403	1.332054	1.334679
3.01	1.321024	1.323798	1.326543	1.329260	1.331949	1.334611	1.337246

TABLE I. (CONTINUED)

S	T						
	3.80	3.85	3.90	3.95	4.00	4.05	4.10
1.54	1.158180	1.159828	1.161462	1.163083	1.164692	1.166288	1.167872
1.57	1.163867	1.165554	1.167228	1.168888	1.170536	1.172171	1.173793
1.60	1.169406	1.171131	1.172842	1.174540	1.176224	1.177895	1.179554
1.63	1.174805	1.176566	1.178313	1.180046	1.181765	1.183471	1.185164
1.66	1.180070	1.181866	1.183647	1.185414	1.187167	1.188906	1.190631
1.69	1.185210	1.187039	1.188853	1.190652	1.192436	1.194207	1.195963
1.72	1.190229	1.192090	1.193935	1.195765	1.197580	1.199380	1.201167
1.75	1.195134	1.197025	1.198900	1.200759	1.202604	1.204433	1.206248
1.78	1.199930	1.201850	1.203754	1.205642	1.207514	1.209371	1.211213
1.81	1.204622	1.206570	1.208501	1.210416	1.212316	1.214199	1.216068
1.84	1.209214	1.211189	1.213147	1.215088	1.217014	1.218923	1.220817
1.87	1.213712	1.215713	1.217696	1.219663	1.221613	1.223547	1.225465
1.90	1.218119	1.220144	1.222152	1.224143	1.226117	1.228075	1.230016
1.93	1.222439	1.224488	1.226520	1.228534	1.230531	1.232512	1.234476
1.96	1.226675	1.228747	1.230802	1.232839	1.234858	1.236861	1.238847
1.99	1.230831	1.232926	1.235003	1.237061	1.239102	1.241126	1.243133
2.02	1.234910	1.237027	1.239125	1.241205	1.243266	1.245311	1.247338
2.05	1.238916	1.241053	1.243172	1.245272	1.247354	1.249418	1.251465
2.08	1.242850	1.245008	1.247146	1.249266	1.251368	1.253451	1.255517
2.11	1.246716	1.248893	1.251051	1.253190	1.255311	1.257413	1.259497
2.14	1.250516	1.252712	1.254889	1.257047	1.259186	1.261306	1.263408
2.17	1.254252	1.256467	1.258662	1.260838	1.262994	1.265132	1.267252
2.20	1.257927	1.260160	1.262373	1.264566	1.266740	1.268895	1.271031
2.23	1.261544	1.263794	1.266024	1.268234	1.270425	1.272596	1.274749
2.26	1.265102	1.267370	1.269617	1.271843	1.274050	1.276238	1.278406
2.29	1.268606	1.270890	1.273153	1.275396	1.277619	1.279822	1.282006
2.32	1.272057	1.274357	1.276636	1.278894	1.281132	1.283351	1.285550
2.35	1.275455	1.277771	1.280065	1.282339	1.284592	1.286826	1.289039
2.38	1.278804	1.281135	1.283445	1.285733	1.288001	1.290249	1.292477
2.41	1.282105	1.284451	1.286775	1.289078	1.291360	1.293622	1.295864
2.44	1.285358	1.287719	1.290057	1.292374	1.294671	1.296946	1.299202
2.47	1.288567	1.290941	1.293294	1.295624	1.297934	1.300223	1.302492
2.50	1.291731	1.294119	1.296485	1.298830	1.301153	1.303455	1.305737
2.53	1.294852	1.297254	1.299633	1.301991	1.304327	1.306642	1.308937
2.56	1.297932	1.300347	1.302739	1.305110	1.307459	1.309786	1.312093
2.59	1.300971	1.303399	1.305805	1.308188	1.310549	1.312889	1.315208
2.62	1.303972	1.306412	1.308830	1.311226	1.313599	1.315951	1.318282
2.65	1.306934	1.309387	1.311817	1.314225	1.316610	1.318974	1.321316
2.68	1.309859	1.312324	1.314766	1.317186	1.319583	1.321958	1.324312
2.71	1.312749	1.315226	1.317679	1.320110	1.322518	1.324905	1.327270
2.74	1.315603	1.318091	1.320557	1.322999	1.325418	1.327816	1.330192
2.77	1.318423	1.320923	1.323399	1.325853	1.328283	1.330691	1.333078
2.80	1.321210	1.323721	1.326208	1.328673	1.331114	1.333533	1.335930
2.83	1.323964	1.326486	1.328985	1.331460	1.333911	1.336341	1.338748
2.86	1.326687	1.329220	1.331729	1.334214	1.336676	1.339116	1.341533
2.89	1.329379	1.331923	1.334442	1.336938	1.339410	1.341860	1.344287
2.92	1.332041	1.334595	1.337125	1.339631	1.342113	1.344572	1.347009
2.95	1.334674	1.337239	1.339778	1.342294	1.344786	1.347255	1.349701
2.98	1.337279	1.339853	1.342402	1.344928	1.347429	1.349908	1.352364
3.01	1.339855	1.342439	1.344998	1.347533	1.350044	1.352532	1.354997

TABLE I. (CONTINUED)

S	T						
	4.15	4.20	4.25	4.30	4.35	4.40	4.45
1.54	1.169445	1.171006	1.172555	1.174093	1.175620	1.177137	1.178642
1.57	1.175403	1.177001	1.178587	1.180161	1.181724	1.183276	1.184817
1.60	1.181199	1.182832	1.184453	1.186062	1.187660	1.189246	1.190820
1.63	1.186843	1.188510	1.190164	1.191806	1.193436	1.195054	1.196660
1.66	1.192343	1.194042	1.195728	1.197401	1.199062	1.200710	1.202347
1.69	1.197706	1.199435	1.201151	1.202854	1.204545	1.206223	1.207889
1.72	1.202939	1.204697	1.206442	1.208174	1.209893	1.211599	1.213292
1.75	1.208049	1.209835	1.211608	1.213367	1.215113	1.216845	1.218565
1.78	1.213041	1.214854	1.216653	1.218439	1.220210	1.221968	1.223714
1.81	1.217922	1.219760	1.221585	1.223395	1.225192	1.226975	1.228744
1.84	1.222695	1.224559	1.226408	1.228242	1.230063	1.231869	1.233662
1.87	1.227367	1.229255	1.231127	1.232985	1.234828	1.236657	1.238472
1.90	1.231942	1.233852	1.235747	1.237627	1.239493	1.241343	1.243180
1.93	1.236424	1.238356	1.240273	1.242174	1.244061	1.245933	1.247790
1.96	1.240816	1.242770	1.244707	1.246630	1.248537	1.250429	1.252306
1.99	1.245123	1.247097	1.249055	1.250997	1.252924	1.254836	1.256733
2.02	1.249348	1.251342	1.253320	1.255281	1.257227	1.259158	1.261074
2.05	1.253495	1.255508	1.257504	1.259485	1.261449	1.263398	1.265332
2.08	1.257566	1.259597	1.261612	1.263611	1.265593	1.267560	1.269511
2.11	1.261564	1.263613	1.265646	1.267662	1.269662	1.271646	1.273614
2.14	1.265492	1.267559	1.269609	1.271642	1.273659	1.275659	1.277644
2.17	1.269353	1.271437	1.273504	1.275553	1.277586	1.279603	1.281603
2.20	1.273149	1.275250	1.277332	1.279398	1.281447	1.283479	1.285495
2.23	1.276883	1.278999	1.281098	1.283179	1.285243	1.287290	1.289321
2.26	1.280556	1.282688	1.284802	1.286898	1.288977	1.291039	1.293085
2.29	1.284171	1.286318	1.288447	1.290558	1.292651	1.294728	1.296788
2.32	1.287730	1.289891	1.292035	1.294160	1.296268	1.298358	1.300432
2.35	1.291234	1.293410	1.295567	1.297707	1.299828	1.301932	1.304019
2.38	1.294686	1.296875	1.299047	1.301199	1.303334	1.305452	1.307552
2.41	1.298086	1.300290	1.302474	1.304640	1.306788	1.308919	1.311032
2.44	1.301438	1.303654	1.305852	1.308031	1.310192	1.312335	1.314460
2.47	1.304741	1.306971	1.309181	1.311373	1.313546	1.315702	1.317839
2.50	1.307999	1.310241	1.312464	1.314668	1.316853	1.319020	1.321170
2.53	1.311211	1.313466	1.315701	1.317917	1.320114	1.322293	1.324454
2.56	1.314380	1.316646	1.318893	1.321121	1.323330	1.325521	1.327693
2.59	1.317506	1.319785	1.322044	1.324283	1.326503	1.328705	1.330888
2.62	1.320592	1.322882	1.325152	1.327403	1.329634	1.331847	1.334041
2.65	1.323638	1.325939	1.328220	1.330482	1.332724	1.334947	1.337152
2.68	1.326644	1.328957	1.331249	1.333521	1.335774	1.338008	1.340224
2.71	1.329614	1.331937	1.334240	1.336523	1.338786	1.341030	1.343256
2.74	1.332546	1.334880	1.337193	1.339486	1.341760	1.344015	1.346250
2.77	1.335443	1.337787	1.340111	1.342414	1.344698	1.346962	1.349207
2.80	1.338305	1.340659	1.342993	1.345306	1.347600	1.349874	1.352129
2.83	1.341133	1.343498	1.345841	1.348164	1.350468	1.352751	1.355015
2.86	1.343929	1.346303	1.348656	1.350989	1.353302	1.355594	1.357868
2.89	1.346692	1.349076	1.351439	1.353781	1.356103	1.358405	1.360687
2.92	1.349424	1.351817	1.354189	1.356541	1.358872	1.361183	1.363474
2.95	1.352125	1.354528	1.356909	1.359270	1.361610	1.363930	1.366230
2.98	1.354797	1.357209	1.359599	1.361968	1.364317	1.366646	1.368955
3.01	1.357440	1.359860	1.362260	1.364638	1.366995	1.369332	1.371650

TABLE I. (CONTINUED)

S	T						
	4.50	4.55	4.60	4.65	4.70	4.75	4.80
1.54	1.180138	1.181622	1.183097	1.184562	1.186017	1.187463	1.188899
1.57	1.186348	1.187867	1.189376	1.190875	1.192364	1.193843	1.195312
1.60	1.192384	1.193936	1.195478	1.197009	1.198529	1.200040	1.201540
1.63	1.198255	1.199839	1.201412	1.202973	1.204524	1.206065	1.207595
1.66	1.203972	1.205586	1.207188	1.208778	1.210358	1.211927	1.213486
1.69	1.209542	1.211184	1.212814	1.214433	1.216040	1.217636	1.219222
1.72	1.214973	1.216642	1.218299	1.219944	1.221578	1.223200	1.224811
1.75	1.220272	1.221967	1.223649	1.225320	1.226978	1.228626	1.230261
1.78	1.225446	1.227165	1.228872	1.230567	1.232250	1.233921	1.235580
1.81	1.230500	1.232243	1.233974	1.235692	1.237398	1.239091	1.240773
1.84	1.235441	1.237207	1.238960	1.240701	1.242428	1.244144	1.245847
1.87	1.240274	1.242062	1.243836	1.245598	1.247347	1.249084	1.250808
1.90	1.245003	1.246812	1.248608	1.250390	1.252160	1.253916	1.255660
1.93	1.249633	1.251463	1.253279	1.255081	1.256870	1.258646	1.260410
1.96	1.254170	1.256019	1.257854	1.259675	1.261483	1.263278	1.265060
1.99	1.258615	1.260483	1.262337	1.264177	1.266003	1.267816	1.269616
2.02	1.262974	1.264861	1.266732	1.268590	1.270434	1.272265	1.274082
2.05	1.267250	1.269154	1.271044	1.272919	1.274780	1.276627	1.278461
2.08	1.271447	1.273368	1.275274	1.277166	1.279043	1.280907	1.282757
2.11	1.275566	1.277504	1.279427	1.281335	1.283228	1.285108	1.286973
2.14	1.279612	1.281566	1.283504	1.285428	1.287337	1.289232	1.291113
2.17	1.283588	1.285557	1.287511	1.289450	1.291374	1.293283	1.295179
2.20	1.287495	1.289479	1.291448	1.293401	1.295340	1.297264	1.299174
2.23	1.291336	1.293335	1.295318	1.297286	1.299239	1.301177	1.303101
2.26	1.295114	1.297127	1.299124	1.301106	1.303073	1.305025	1.306962
2.29	1.298831	1.300858	1.302869	1.304864	1.306844	1.308810	1.310760
2.32	1.302489	1.304529	1.306554	1.308562	1.310555	1.312533	1.314496
2.35	1.306089	1.308143	1.310180	1.312202	1.314208	1.316198	1.318174
2.38	1.309635	1.311701	1.313752	1.315786	1.317804	1.319807	1.321794
2.41	1.313127	1.315206	1.317269	1.319315	1.321345	1.323360	1.325359
2.44	1.316568	1.318659	1.320734	1.322792	1.324834	1.326860	1.328871
2.47	1.319959	1.322062	1.324148	1.326218	1.328272	1.330309	1.332331
2.50	1.323302	1.325416	1.327514	1.329595	1.331660	1.333709	1.335742
2.53	1.326597	1.328723	1.330832	1.332925	1.335000	1.337060	1.339104
2.56	1.329848	1.331985	1.334105	1.336208	1.338294	1.340364	1.342418
2.59	1.333054	1.335202	1.337332	1.339446	1.341543	1.343623	1.345688
2.62	1.336217	1.338376	1.340517	1.342641	1.344748	1.346839	1.348913
2.65	1.339339	1.341508	1.343659	1.345793	1.347911	1.350011	1.352095
2.68	1.342421	1.344600	1.346761	1.348905	1.351032	1.353142	1.355236
2.71	1.345463	1.347652	1.349823	1.351977	1.354113	1.356233	1.358336
2.74	1.348467	1.350666	1.352847	1.355010	1.357156	1.359285	1.361397
2.77	1.351434	1.353642	1.355833	1.358005	1.360160	1.362299	1.364420
2.80	1.354365	1.356583	1.358782	1.360964	1.363128	1.365275	1.367406
2.83	1.357261	1.359488	1.361696	1.363887	1.366060	1.368216	1.370355
2.86	1.360122	1.362358	1.364576	1.366775	1.368957	1.371122	1.373269
2.89	1.362951	1.365195	1.367422	1.369630	1.371820	1.373993	1.376149
2.92	1.365747	1.368000	1.370235	1.372452	1.374650	1.376832	1.378996
2.95	1.368511	1.370773	1.373016	1.375241	1.377448	1.379638	1.381810
2.98	1.371244	1.373514	1.375766	1.377999	1.380214	1.382412	1.384592
3.01	1.373947	1.376226	1.378486	1.380727	1.382950	1.385155	1.387343

TABLE I. (CONTINUED)

S	T						
	1.00	1.05	1.10	1.15	1.20	1.25	1.30
3.04	1.123149	1.129587	1.135834	1.141904	1.147807	1.153554	1.159153
3.07	1.124694	1.131166	1.137447	1.143548	1.149482	1.155258	1.160886
3.10	1.126228	1.132734	1.139047	1.145180	1.151144	1.156949	1.162605
3.13	1.127751	1.134291	1.140637	1.146800	1.152794	1.158628	1.164311
3.16	1.129264	1.135837	1.142214	1.148408	1.154431	1.160293	1.166004
3.19	1.130767	1.137372	1.143781	1.150005	1.156057	1.161946	1.167684
3.22	1.132259	1.138897	1.145336	1.151590	1.157670	1.163587	1.169351
3.25	1.133741	1.140410	1.146880	1.153163	1.159272	1.165216	1.171006
3.28	1.135213	1.141914	1.148414	1.154726	1.160862	1.166833	1.172649
3.31	1.136675	1.143407	1.149937	1.156277	1.162441	1.168439	1.174280
3.34	1.138128	1.144890	1.151449	1.157818	1.164009	1.170033	1.175899
3.37	1.139571	1.146364	1.152952	1.159348	1.165566	1.171615	1.177506
3.40	1.141004	1.147827	1.154444	1.160868	1.167112	1.173187	1.179102
3.43	1.142428	1.149281	1.155926	1.162377	1.168647	1.174747	1.180687
3.46	1.143843	1.150725	1.157398	1.163876	1.170172	1.176297	1.182260
3.49	1.145250	1.152160	1.158861	1.165365	1.171687	1.177836	1.183823
3.52	1.146647	1.153586	1.160314	1.166845	1.173191	1.179364	1.185375
3.55	1.148035	1.155003	1.161758	1.168314	1.174685	1.180883	1.186916
3.58	1.149415	1.156410	1.163192	1.169774	1.176170	1.182391	1.188447
3.61	1.150786	1.157809	1.164617	1.171225	1.177645	1.183889	1.189967
3.64	1.152149	1.159199	1.166033	1.172666	1.179110	1.185377	1.191478
3.67	1.153504	1.160581	1.167441	1.174098	1.180565	1.186855	1.192978
3.70	1.154850	1.161954	1.168839	1.175521	1.182012	1.188324	1.194468
3.73	1.156188	1.163318	1.170229	1.176935	1.183449	1.189784	1.195949
3.76	1.157518	1.164675	1.171610	1.178340	1.184877	1.191234	1.197420
3.79	1.158841	1.166023	1.172983	1.179736	1.186296	1.192674	1.198882
3.82	1.160155	1.167363	1.174347	1.181124	1.187706	1.194106	1.200335
3.85	1.161462	1.168695	1.175704	1.182504	1.189108	1.195529	1.201778
3.88	1.162762	1.170019	1.177052	1.183875	1.190501	1.196943	1.203212
3.91	1.164053	1.171336	1.178392	1.185238	1.191886	1.198349	1.204638
3.94	1.165338	1.172645	1.179725	1.186592	1.193262	1.199745	1.206054
3.97	1.166615	1.173946	1.181049	1.187939	1.194630	1.201134	1.207462
4.00	1.167885	1.175240	1.182366	1.189278	1.195989	1.202514	1.208862
4.03	1.169148	1.176527	1.183675	1.190609	1.197341	1.203885	1.210253
4.06	1.170404	1.177806	1.184977	1.191932	1.198685	1.205249	1.211635
4.09	1.171652	1.179078	1.186271	1.193248	1.200021	1.206605	1.213010
4.12	1.172894	1.180343	1.187558	1.194556	1.201349	1.207952	1.214376
4.15	1.174130	1.181601	1.188838	1.195856	1.202670	1.209292	1.215734
4.18	1.175358	1.182852	1.190111	1.197150	1.203983	1.210624	1.217084
4.21	1.176580	1.184097	1.191377	1.198436	1.205289	1.211949	1.218427
4.24	1.177795	1.185334	1.192635	1.199715	1.206587	1.213266	1.219762
4.27	1.179004	1.186565	1.193887	1.200987	1.207878	1.214575	1.221089
4.30	1.180207	1.187789	1.195132	1.202252	1.209162	1.215877	1.222409
4.33	1.181403	1.189007	1.196371	1.203510	1.210439	1.217172	1.223721
4.36	1.182593	1.190219	1.197602	1.204761	1.211709	1.218460	1.225026
4.39	1.183777	1.191424	1.198828	1.206005	1.212972	1.219741	1.226324
4.42	1.184954	1.192622	1.200046	1.207243	1.214228	1.221014	1.227614
4.45	1.186126	1.193815	1.201259	1.208475	1.215478	1.222281	1.228898
4.48	1.187292	1.195001	1.202465	1.209699	1.216720	1.223541	1.230174
4.51	1.188452	1.196181	1.203664	1.210918	1.217956	1.224794	1.231444

TABLE I. (CONTINUED)

S	T						
	1.35	1.40	1.45	1.50	1.55	1.60	1.65
3.04	1.164614	1.169943	1.175148	1.180235	1.185211	1.190080	1.194847
3.07	1.166374	1.171730	1.176960	1.182073	1.187072	1.191964	1.196755
3.10	1.168120	1.173502	1.178758	1.183895	1.188918	1.193833	1.198646
3.13	1.169853	1.175260	1.180541	1.185702	1.190749	1.195687	1.200521
3.16	1.171572	1.177005	1.182310	1.187495	1.192565	1.197525	1.202381
3.19	1.173278	1.178736	1.184066	1.189274	1.194366	1.199348	1.204226
3.22	1.174971	1.180454	1.185807	1.191038	1.196153	1.201157	1.206056
3.25	1.176651	1.182158	1.187535	1.192789	1.197926	1.202952	1.207871
3.28	1.178319	1.183850	1.189250	1.194527	1.199685	1.204732	1.209672
3.31	1.179974	1.185529	1.190952	1.196251	1.201431	1.206498	1.211458
3.34	1.181617	1.187195	1.192641	1.197962	1.203163	1.208251	1.213231
3.37	1.183248	1.188850	1.194318	1.199660	1.204882	1.209990	1.214990
3.40	1.184868	1.190492	1.195982	1.201345	1.206588	1.211716	1.216735
3.43	1.186476	1.192122	1.197634	1.203019	1.208282	1.213429	1.218467
3.46	1.188072	1.193741	1.199274	1.204679	1.209962	1.215130	1.220187
3.49	1.189658	1.195348	1.200903	1.206328	1.211631	1.216818	1.221893
3.52	1.191232	1.196944	1.202520	1.207965	1.213288	1.218493	1.223587
3.55	1.192795	1.198529	1.204125	1.209591	1.214932	1.220156	1.225268
3.58	1.194348	1.200103	1.205719	1.211204	1.216565	1.221808	1.226938
3.61	1.195890	1.201666	1.207302	1.212807	1.218187	1.223447	1.228595
3.64	1.197422	1.203218	1.208874	1.214398	1.219797	1.225075	1.230241
3.67	1.198943	1.204760	1.210436	1.215979	1.221395	1.226692	1.231874
3.70	1.200455	1.206291	1.211987	1.217548	1.222983	1.228297	1.233497
3.73	1.201956	1.207813	1.213527	1.219107	1.224560	1.229892	1.235108
3.76	1.203448	1.209324	1.215057	1.220656	1.226127	1.231475	1.236708
3.79	1.204930	1.210825	1.216578	1.222194	1.227682	1.233048	1.238297
3.82	1.206402	1.212317	1.218088	1.223722	1.229228	1.234610	1.239876
3.85	1.207865	1.213799	1.219588	1.225240	1.230763	1.236162	1.241444
3.88	1.209319	1.215271	1.221079	1.226749	1.232288	1.237703	1.243001
3.91	1.210763	1.216735	1.222560	1.228247	1.233803	1.239235	1.244548
3.94	1.212199	1.218189	1.224032	1.229736	1.235309	1.240756	1.246085
3.97	1.213626	1.219634	1.225494	1.231215	1.236805	1.242268	1.247612
4.00	1.215044	1.221070	1.226948	1.232686	1.238291	1.243770	1.249129
4.03	1.216453	1.222497	1.228392	1.234146	1.239768	1.245262	1.250637
4.06	1.217854	1.223915	1.229827	1.235598	1.241235	1.246745	1.252135
4.09	1.219247	1.225325	1.231254	1.237041	1.242694	1.248219	1.253623
4.12	1.220631	1.226727	1.232672	1.238475	1.244144	1.249684	1.255102
4.15	1.222007	1.228120	1.234082	1.239901	1.245584	1.251139	1.256572
4.18	1.223375	1.229504	1.235483	1.241317	1.247016	1.252586	1.258033
4.21	1.224734	1.230881	1.236875	1.242726	1.248440	1.254024	1.259485
4.24	1.226086	1.232249	1.238260	1.244126	1.249855	1.255453	1.260929
4.27	1.227431	1.233610	1.239636	1.245517	1.251261	1.256874	1.262363
4.30	1.228767	1.234963	1.241005	1.246901	1.252659	1.258286	1.263789
4.33	1.230096	1.236308	1.242365	1.248276	1.254049	1.259690	1.265207
4.36	1.231418	1.237645	1.243718	1.249644	1.255431	1.261086	1.266616
4.39	1.232732	1.238975	1.245063	1.251004	1.256805	1.262474	1.268017
4.42	1.234039	1.240298	1.246401	1.252356	1.258171	1.263853	1.269409
4.45	1.235338	1.241613	1.247731	1.253700	1.259529	1.265225	1.270794
4.48	1.236631	1.242921	1.249053	1.255037	1.260880	1.266589	1.272171
4.51	1.237916	1.244221	1.250368	1.256366	1.262223	1.267945	1.273540

TABLE I. (CONTINUED)

S	T						
	1.70	1.75	1.80	1.85	1.90	1.95	2.00
3.04	1.199518	1.204097	1.208588	1.212993	1.217318	1.221565	1.225738
3.07	1.201448	1.206048	1.210559	1.214985	1.219330	1.223596	1.227788
3.10	1.203361	1.207982	1.212514	1.216960	1.221324	1.225609	1.229819
3.13	1.205258	1.209899	1.214451	1.218917	1.223300	1.227604	1.231832
3.16	1.207139	1.211801	1.216373	1.220858	1.225260	1.229582	1.233828
3.19	1.209004	1.213687	1.218278	1.222782	1.227203	1.231543	1.235807
3.22	1.210854	1.215557	1.220167	1.224690	1.229129	1.233488	1.237768
3.25	1.212690	1.217412	1.222041	1.226583	1.231040	1.235416	1.239714
3.28	1.214510	1.219251	1.223900	1.228460	1.232934	1.237327	1.241642
3.31	1.216316	1.221076	1.225744	1.230321	1.234813	1.239224	1.243555
3.34	1.218108	1.222887	1.227572	1.232168	1.236677	1.241104	1.245452
3.37	1.219886	1.224684	1.229387	1.234000	1.238526	1.242970	1.247334
3.40	1.221650	1.226466	1.231187	1.235817	1.240361	1.244821	1.249201
3.43	1.223401	1.228235	1.232973	1.237621	1.242181	1.246657	1.251052
3.46	1.225139	1.229990	1.234746	1.239410	1.243986	1.248478	1.252889
3.49	1.226863	1.231732	1.236505	1.241186	1.245778	1.250286	1.254712
3.52	1.228575	1.233461	1.238251	1.242948	1.247556	1.252079	1.256521
3.55	1.230274	1.235177	1.239984	1.244697	1.249321	1.253859	1.258315
3.58	1.231960	1.236881	1.241703	1.246432	1.251072	1.255625	1.260097
3.61	1.233635	1.238572	1.243411	1.248155	1.252810	1.257379	1.261864
3.64	1.235297	1.240251	1.245106	1.249866	1.254536	1.259119	1.263619
3.67	1.236948	1.241918	1.246788	1.251564	1.256249	1.260846	1.265360
3.70	1.238587	1.243573	1.248459	1.253250	1.257949	1.262561	1.267089
3.73	1.240214	1.245216	1.250118	1.254923	1.259637	1.264264	1.268805
3.76	1.241831	1.246848	1.251765	1.256585	1.261314	1.265954	1.270509
3.79	1.243436	1.248469	1.253400	1.258235	1.262978	1.267632	1.272201
3.82	1.245030	1.250078	1.255025	1.259874	1.264631	1.269299	1.273881
3.85	1.246613	1.251677	1.256638	1.261502	1.266272	1.270953	1.275549
3.88	1.248186	1.253264	1.258240	1.263118	1.267902	1.272597	1.277205
3.91	1.249749	1.254841	1.259832	1.264723	1.269521	1.274229	1.278850
3.94	1.251301	1.256408	1.261412	1.266318	1.271129	1.275850	1.280484
3.97	1.252843	1.257964	1.262983	1.267902	1.272727	1.277460	1.282107
4.00	1.254374	1.259511	1.264543	1.269476	1.274313	1.279060	1.283719
4.03	1.255896	1.261047	1.266093	1.271039	1.275889	1.280649	1.285320
4.06	1.257409	1.262573	1.267633	1.272592	1.277455	1.282227	1.286911
4.09	1.258911	1.264090	1.269163	1.274135	1.279011	1.283795	1.288491
4.12	1.260405	1.265597	1.270683	1.275668	1.280557	1.285353	1.290060
4.15	1.261889	1.267094	1.272193	1.277192	1.282093	1.286901	1.291620
4.18	1.263363	1.268582	1.273696	1.278705	1.283619	1.288439	1.293170
4.21	1.264829	1.270061	1.275186	1.280210	1.285135	1.289967	1.294710
4.24	1.266286	1.271531	1.276669	1.281705	1.286642	1.291486	1.296240
4.27	1.267734	1.272992	1.278143	1.283191	1.288140	1.292995	1.297761
4.30	1.269173	1.274444	1.279607	1.284667	1.289629	1.294496	1.299272
4.33	1.270604	1.275888	1.281063	1.286135	1.291108	1.295986	1.300774
4.36	1.272026	1.277322	1.282510	1.287594	1.292579	1.297468	1.302266
4.39	1.273440	1.278749	1.283948	1.289044	1.294040	1.298941	1.303750
4.42	1.274845	1.280167	1.285378	1.290486	1.295493	1.300405	1.305225
4.45	1.276243	1.281576	1.286800	1.291919	1.296938	1.301860	1.306691
4.48	1.277632	1.282978	1.288213	1.293344	1.298374	1.303307	1.308148
4.51	1.279014	1.284371	1.289618	1.294760	1.299801	1.304745	1.309597

TABLE I. (CONTINUED)

S	T						
	2.05	2.10	2.15	2.20	2.25	2.30	2.35
3.04	1.229839	1.233871	1.237836	1.241737	1.245577	1.249357	1.253080
3.07	1.231907	1.235956	1.239939	1.243858	1.247714	1.251511	1.255249
3.10	1.233956	1.238023	1.242023	1.245959	1.249831	1.253644	1.257398
3.13	1.235987	1.240072	1.244089	1.248041	1.251929	1.255758	1.259527
3.16	1.238001	1.242102	1.246136	1.250104	1.254009	1.257852	1.261637
3.19	1.239996	1.244115	1.248165	1.252149	1.256069	1.259928	1.263728
3.22	1.241975	1.246110	1.250176	1.254176	1.258112	1.261986	1.265800
3.25	1.243937	1.248088	1.252170	1.256185	1.260136	1.264025	1.267854
3.28	1.245882	1.250049	1.254147	1.258178	1.262144	1.266047	1.269891
3.31	1.247811	1.251994	1.256107	1.260153	1.264134	1.268052	1.271909
3.34	1.249724	1.253923	1.258051	1.262112	1.266107	1.270039	1.273910
3.37	1.251622	1.255836	1.259979	1.264054	1.268064	1.272010	1.275895
3.40	1.253504	1.257733	1.261891	1.265981	1.270004	1.273964	1.277863
3.43	1.255371	1.259615	1.263788	1.267891	1.271929	1.275903	1.279814
3.46	1.257223	1.261482	1.265669	1.269787	1.273838	1.277825	1.281750
3.49	1.259061	1.263334	1.267535	1.271667	1.275732	1.279732	1.283670
3.52	1.260884	1.265172	1.269387	1.273532	1.277611	1.281624	1.285574
3.55	1.262693	1.266995	1.271224	1.275383	1.279475	1.283501	1.287464
3.58	1.264489	1.268805	1.273047	1.277220	1.281324	1.285363	1.289338
3.61	1.266270	1.270600	1.274856	1.279042	1.283159	1.287210	1.291198
3.64	1.268039	1.272382	1.276652	1.280850	1.284980	1.289044	1.293044
3.67	1.269794	1.274151	1.278434	1.282645	1.286787	1.290863	1.294875
3.70	1.271537	1.275907	1.280202	1.284426	1.288581	1.292669	1.296693
3.73	1.273266	1.277650	1.281958	1.286194	1.290361	1.294461	1.298497
3.76	1.274984	1.279380	1.283701	1.287950	1.292129	1.296240	1.300287
3.79	1.276689	1.281098	1.285431	1.289692	1.293883	1.298006	1.302065
3.82	1.278381	1.282803	1.287149	1.291422	1.295625	1.299759	1.303829
3.85	1.280062	1.284496	1.288854	1.293139	1.297354	1.301500	1.305581
3.88	1.281731	1.286178	1.290548	1.294845	1.299070	1.303228	1.307320
3.91	1.283389	1.287848	1.292230	1.296538	1.300775	1.304944	1.309046
3.94	1.285035	1.289506	1.293900	1.298220	1.302468	1.306648	1.310761
3.97	1.286670	1.291153	1.295558	1.299890	1.304149	1.308340	1.312463
4.00	1.288294	1.292789	1.297206	1.301548	1.305819	1.310020	1.314154
4.03	1.289907	1.294413	1.298842	1.303195	1.307477	1.311689	1.315833
4.06	1.291510	1.296027	1.300467	1.304832	1.309124	1.313346	1.317501
4.09	1.293101	1.297631	1.302081	1.306457	1.310760	1.314992	1.319157
4.12	1.294683	1.299223	1.303685	1.308071	1.312385	1.316628	1.320803
4.15	1.296254	1.300806	1.305278	1.309675	1.313999	1.318252	1.322437
4.18	1.297815	1.302378	1.306861	1.311269	1.315603	1.319866	1.324061
4.21	1.299366	1.303940	1.308434	1.312852	1.317196	1.321469	1.325674
4.24	1.300907	1.305492	1.309997	1.314425	1.318779	1.323062	1.327277
4.27	1.302439	1.307034	1.311550	1.315988	1.320352	1.324645	1.328869
4.30	1.303961	1.308567	1.313093	1.317541	1.321915	1.326218	1.330451
4.33	1.305474	1.310090	1.314626	1.319085	1.323469	1.327781	1.332023
4.36	1.306977	1.311604	1.316150	1.320619	1.325012	1.329334	1.333586
4.39	1.308472	1.313109	1.317665	1.322143	1.326546	1.330877	1.335138
4.42	1.309957	1.314604	1.319170	1.323658	1.328071	1.332411	1.336681
4.45	1.311433	1.316091	1.320667	1.325164	1.329586	1.333936	1.338215
4.48	1.312901	1.317568	1.322154	1.326661	1.331092	1.335451	1.339739
4.51	1.314360	1.319037	1.323632	1.328149	1.332590	1.336957	1.341254

TABLE I. (CONTINUED)

S	T						
	2.40	2.45	2.50	2.55	2.60	2.65	2.70
3.04	1.256747	1.260360	1.263921	1.267432	1.270894	1.274309	1.277678
3.07	1.258932	1.262560	1.266136	1.269662	1.273138	1.276567	1.279950
3.10	1.261096	1.264740	1.268331	1.271871	1.275361	1.278804	1.282200
3.13	1.263240	1.266899	1.270504	1.274058	1.277563	1.281019	1.284429
3.16	1.265365	1.269038	1.272658	1.276226	1.279744	1.283214	1.286636
3.19	1.267471	1.271158	1.274792	1.278373	1.281905	1.285388	1.288824
3.22	1.269557	1.273259	1.276906	1.280502	1.284046	1.287542	1.290991
3.25	1.271626	1.275341	1.279002	1.282611	1.286169	1.289677	1.293138
3.28	1.273676	1.277405	1.281079	1.284701	1.288272	1.291793	1.295267
3.31	1.275708	1.279450	1.283138	1.286773	1.290356	1.293890	1.297376
3.34	1.277723	1.281479	1.285179	1.288827	1.292423	1.295969	1.299467
3.37	1.279721	1.283490	1.287203	1.290863	1.294471	1.298030	1.301539
3.40	1.281702	1.285484	1.289210	1.292882	1.296503	1.300073	1.303594
3.43	1.283666	1.287461	1.291200	1.294884	1.298517	1.302098	1.305631
3.46	1.285619	1.289422	1.293173	1.296870	1.300514	1.304107	1.307651
3.49	1.287548	1.291367	1.295130	1.298839	1.302494	1.306099	1.309654
3.52	1.289465	1.293296	1.297071	1.300792	1.304459	1.308075	1.311641
3.55	1.291366	1.295210	1.298997	1.302729	1.306407	1.310034	1.313611
3.58	1.293253	1.297109	1.300907	1.304650	1.308340	1.311978	1.315566
3.61	1.295125	1.298992	1.302802	1.306557	1.310258	1.313906	1.317505
3.64	1.296982	1.300861	1.304683	1.308448	1.312160	1.315819	1.319428
3.67	1.298825	1.302716	1.306548	1.310325	1.314048	1.317718	1.321337
3.70	1.300655	1.304556	1.308400	1.312187	1.315920	1.319601	1.323230
3.73	1.302470	1.306383	1.310237	1.314036	1.317779	1.321470	1.325109
3.76	1.304272	1.308196	1.312061	1.315870	1.319624	1.323325	1.326974
3.79	1.306060	1.309995	1.313871	1.317690	1.321454	1.325165	1.328825
3.82	1.307836	1.311781	1.315668	1.319497	1.323271	1.326992	1.330661
3.85	1.309598	1.313554	1.317451	1.321291	1.325075	1.328806	1.332484
3.88	1.311348	1.315314	1.319222	1.323072	1.326866	1.330606	1.334294
3.91	1.313085	1.317062	1.320980	1.324839	1.328643	1.332393	1.336091
3.94	1.314810	1.318797	1.322725	1.326596	1.330408	1.334167	1.337874
3.97	1.316523	1.320521	1.324458	1.328337	1.332160	1.335929	1.339645
4.00	1.318224	1.322232	1.326179	1.330068	1.333900	1.337678	1.341403
4.03	1.319913	1.323931	1.327888	1.331786	1.335628	1.339415	1.343149
4.06	1.321591	1.325618	1.329585	1.333493	1.337344	1.341140	1.344883
4.09	1.323257	1.327294	1.331271	1.335188	1.339048	1.342853	1.346605
4.12	1.324913	1.328959	1.332945	1.336871	1.340740	1.344554	1.348315
4.15	1.326557	1.330613	1.334608	1.338543	1.342422	1.346244	1.350013
4.18	1.328190	1.332256	1.336260	1.340204	1.344091	1.347923	1.351700
4.21	1.329813	1.333888	1.337901	1.341854	1.345750	1.349590	1.353376
4.24	1.331425	1.335509	1.339531	1.343493	1.347398	1.351246	1.355040
4.27	1.333026	1.337120	1.341151	1.345122	1.349035	1.352892	1.356694
4.30	1.334618	1.338720	1.342760	1.346740	1.350661	1.354526	1.358337
4.33	1.336199	1.340310	1.344359	1.348347	1.352277	1.356151	1.359969
4.36	1.337770	1.341890	1.345948	1.349945	1.353883	1.357764	1.361591
4.39	1.339332	1.343461	1.347527	1.351532	1.355478	1.359368	1.363202
4.42	1.340884	1.345021	1.349096	1.353109	1.357064	1.360961	1.364804
4.45	1.342426	1.346572	1.350655	1.354677	1.358640	1.362545	1.366395
4.48	1.343959	1.348114	1.352205	1.356235	1.360205	1.364119	1.367977
4.51	1.345483	1.349646	1.353745	1.357783	1.361762	1.365683	1.369548

TABLE I. (CONTINUED)

S	τ						
	2.75	2.80	2.85	2.90	2.95	3.00	3.05
3.04	1.281002	1.284284	1.287523	1.290721	1.293980	1.297000	1.300082
3.07	1.283288	1.286582	1.289834	1.293046	1.296217	1.299349	1.302444
3.10	1.285551	1.288859	1.292124	1.295348	1.298531	1.301676	1.304782
3.13	1.287793	1.291113	1.294391	1.297627	1.300823	1.303980	1.307098
3.16	1.290014	1.293347	1.296637	1.299885	1.303093	1.306261	1.309391
3.19	1.292214	1.295559	1.298862	1.302122	1.305342	1.308521	1.311663
3.22	1.294393	1.297751	1.301066	1.304338	1.307569	1.310760	1.313913
3.25	1.296553	1.299923	1.303249	1.306533	1.309776	1.312978	1.316142
3.28	1.298693	1.302075	1.305413	1.308708	1.311962	1.315176	1.318351
3.31	1.300815	1.304208	1.307558	1.310864	1.314129	1.317354	1.320539
3.34	1.302917	1.306322	1.309683	1.313001	1.316277	1.319512	1.322708
3.37	1.305001	1.308418	1.311790	1.315118	1.318405	1.321651	1.324857
3.40	1.307067	1.310495	1.313878	1.317218	1.320515	1.323772	1.326988
3.43	1.309116	1.312555	1.315949	1.319299	1.322607	1.325873	1.329100
3.46	1.311147	1.314597	1.318001	1.321362	1.324680	1.327957	1.331194
3.49	1.313161	1.316622	1.320037	1.323408	1.326737	1.330023	1.333270
3.52	1.315159	1.318630	1.322056	1.325437	1.328775	1.332072	1.335328
3.55	1.317140	1.320622	1.324057	1.327449	1.330797	1.334104	1.337369
3.58	1.319105	1.322597	1.326043	1.329444	1.332803	1.336119	1.339394
3.61	1.321054	1.324556	1.328013	1.331424	1.334792	1.338117	1.341402
3.64	1.322988	1.326500	1.329966	1.333387	1.336765	1.340100	1.343393
3.67	1.324907	1.328429	1.331905	1.335335	1.338722	1.342066	1.345369
3.70	1.326810	1.330342	1.333828	1.337268	1.340664	1.344017	1.347329
3.73	1.328699	1.332241	1.335736	1.339185	1.342590	1.345953	1.349273
3.76	1.330574	1.334125	1.337629	1.341088	1.344502	1.347873	1.351203
3.79	1.332434	1.335995	1.339508	1.342976	1.346399	1.349779	1.353117
3.82	1.334280	1.337850	1.341373	1.344850	1.348282	1.351671	1.355017
3.85	1.336113	1.339692	1.343224	1.346709	1.350150	1.353548	1.356903
3.88	1.337932	1.341520	1.345061	1.348555	1.352005	1.355411	1.358774
3.91	1.339737	1.343335	1.346884	1.350388	1.353846	1.357260	1.360631
3.94	1.341530	1.345136	1.348695	1.352207	1.355673	1.359096	1.362475
3.97	1.343310	1.346925	1.350492	1.354012	1.357487	1.360918	1.364306
4.00	1.345077	1.348701	1.352276	1.355805	1.359288	1.362727	1.366123
4.03	1.346832	1.350464	1.354048	1.357585	1.361077	1.364523	1.367927
4.06	1.348574	1.352215	1.355808	1.359353	1.362852	1.366307	1.369719
4.09	1.350304	1.353954	1.357555	1.361108	1.364615	1.368078	1.371497
4.12	1.352023	1.355681	1.359290	1.362851	1.366366	1.369837	1.373264
4.15	1.353730	1.357396	1.361013	1.364582	1.368105	1.371584	1.375018
4.18	1.355425	1.359099	1.362724	1.366302	1.369833	1.373318	1.376760
4.21	1.357109	1.360791	1.364424	1.368009	1.371548	1.375041	1.378490
4.24	1.358782	1.362472	1.366113	1.369706	1.373252	1.376753	1.380209
4.27	1.360443	1.364142	1.367790	1.371391	1.374944	1.378453	1.381916
4.30	1.362094	1.365801	1.369457	1.373065	1.376626	1.380141	1.383612
4.33	1.363735	1.367448	1.371112	1.374728	1.378296	1.381819	1.385297
4.36	1.365364	1.369086	1.372757	1.376380	1.379956	1.383486	1.386971
4.39	1.366983	1.370713	1.374392	1.378022	1.381605	1.385142	1.388634
4.42	1.368593	1.372329	1.376016	1.379653	1.383243	1.386787	1.390286
4.45	1.370191	1.373936	1.377630	1.381274	1.384871	1.388422	1.391928
4.48	1.371780	1.375532	1.379233	1.382885	1.386489	1.390047	1.393559
4.51	1.373360	1.377119	1.380827	1.384486	1.388097	1.391661	1.395181

TABLE I. (CONTINUED).

S	T						
	3.10	3.15	3.20	3.25	3.30	3.35	3.40
3.04	1.303128	1.306138	1.309114	1.312056	1.314965	1.317841	1.320687
3.07	1.305502	1.308524	1.311511	1.314464	1.317384	1.320272	1.323128
3.10	1.307852	1.310886	1.313884	1.316849	1.319780	1.322678	1.325545
3.13	1.310179	1.313224	1.316234	1.319209	1.322151	1.325061	1.327938
3.16	1.312484	1.315540	1.318561	1.321547	1.324500	1.327419	1.330307
3.19	1.314767	1.317834	1.320865	1.323862	1.326825	1.329755	1.332653
3.22	1.317028	1.320106	1.323148	1.326155	1.329129	1.332069	1.334977
3.25	1.319268	1.322356	1.325409	1.328427	1.331410	1.334361	1.337278
3.28	1.321487	1.324586	1.327649	1.330677	1.333671	1.336631	1.339558
3.31	1.323686	1.326796	1.329869	1.332907	1.335910	1.338880	1.341817
3.34	1.325865	1.328985	1.332068	1.335116	1.338129	1.341109	1.344055
3.37	1.328025	1.331155	1.334248	1.337306	1.340328	1.343317	1.346273
3.40	1.330166	1.333305	1.336408	1.339476	1.342508	1.345506	1.348471
3.43	1.332288	1.335437	1.338550	1.341626	1.344668	1.347675	1.350649
3.46	1.334391	1.337550	1.340673	1.343758	1.346809	1.349825	1.352808
3.49	1.336477	1.339646	1.342777	1.345872	1.348932	1.351957	1.354948
3.52	1.338545	1.341723	1.344864	1.347968	1.351036	1.354070	1.357070
3.55	1.340595	1.343783	1.346933	1.350046	1.353123	1.356166	1.359174
3.58	1.342629	1.345826	1.348984	1.352106	1.355193	1.358244	1.361261
3.61	1.344646	1.347852	1.351019	1.354150	1.357245	1.360304	1.363330
3.64	1.346647	1.349861	1.353038	1.356177	1.359280	1.362346	1.365382
3.67	1.348631	1.351854	1.355040	1.358187	1.361299	1.364375	1.367417
3.70	1.350600	1.353832	1.357025	1.360182	1.363302	1.366386	1.369436
3.73	1.352553	1.355794	1.358996	1.362160	1.365288	1.368361	1.371438
3.76	1.354491	1.357740	1.360950	1.364123	1.367259	1.370360	1.373425
3.79	1.356414	1.359672	1.362890	1.366071	1.369215	1.372323	1.375396
3.82	1.358323	1.361588	1.364819	1.368004	1.371155	1.374271	1.377352
3.85	1.360216	1.363490	1.366725	1.369921	1.373081	1.376205	1.379293
3.88	1.362096	1.365378	1.368620	1.371825	1.374992	1.378123	1.381219
3.91	1.363962	1.367251	1.370502	1.373714	1.376889	1.380028	1.383131
3.94	1.365813	1.369111	1.372369	1.375589	1.378772	1.381918	1.385028
3.97	1.367652	1.370957	1.374223	1.377451	1.380640	1.383794	1.386911
4.00	1.369477	1.372790	1.376063	1.379298	1.382495	1.385656	1.388781
4.03	1.371289	1.374610	1.377891	1.381133	1.384337	1.387505	1.390637
4.06	1.373088	1.376416	1.379705	1.382954	1.386166	1.389340	1.392479
4.09	1.374874	1.378210	1.381506	1.384762	1.387981	1.391163	1.394309
4.12	1.376648	1.379991	1.383294	1.386558	1.389784	1.392973	1.396125
4.15	1.378410	1.381760	1.385070	1.388341	1.391574	1.394770	1.397929
4.18	1.380155	1.383517	1.386834	1.390112	1.393352	1.396554	1.399720
4.21	1.381897	1.385262	1.388586	1.391871	1.395117	1.398326	1.401499
4.24	1.383623	1.386995	1.390326	1.393618	1.396871	1.400086	1.403265
4.27	1.385337	1.388716	1.392054	1.395353	1.398613	1.401835	1.405020
4.30	1.387040	1.390426	1.393771	1.397076	1.400343	1.403571	1.406763
4.33	1.388732	1.392125	1.395476	1.398788	1.402061	1.405296	1.408494
4.36	1.390413	1.393812	1.397171	1.400489	1.403768	1.407010	1.410214
4.39	1.392082	1.395489	1.398854	1.402179	1.405465	1.408712	1.411923
4.42	1.393742	1.397154	1.400526	1.403857	1.407150	1.410404	1.413621
4.45	1.395390	1.398810	1.402188	1.405526	1.408824	1.412084	1.415307
4.48	1.397028	1.400454	1.403839	1.407183	1.410488	1.413754	1.416983
4.51	1.398656	1.402089	1.405480	1.408830	1.412141	1.415413	1.418648

TABLE 1. (CONTINUED)

S	T						
	3.45	3.50	3.55	3.60	3.65	3.70	3.75
3.04	1.323501	1.326286	1.329042	1.331769	1.334468	1.337140	1.339785
3.07	1.325954	1.328749	1.331515	1.334252	1.336961	1.339643	1.342298
3.10	1.328381	1.331187	1.333963	1.336710	1.339429	1.342121	1.344786
3.13	1.330784	1.333600	1.336386	1.339143	1.341872	1.344573	1.347247
3.16	1.333163	1.335989	1.338785	1.341552	1.344291	1.347001	1.349685
3.19	1.335520	1.338355	1.341161	1.343938	1.346685	1.349405	1.352098
3.22	1.337853	1.340698	1.343514	1.346300	1.349057	1.351786	1.354488
3.25	1.340164	1.343019	1.345844	1.348639	1.351405	1.354144	1.356854
3.28	1.342454	1.345318	1.348152	1.350956	1.353732	1.356479	1.359198
3.31	1.344722	1.347596	1.350439	1.353252	1.356036	1.358792	1.361520
3.34	1.346969	1.349852	1.352704	1.355526	1.358319	1.361083	1.363820
3.37	1.349196	1.352088	1.354949	1.357780	1.360581	1.363354	1.366099
3.40	1.351403	1.354303	1.357173	1.360013	1.362823	1.365604	1.368357
3.43	1.353590	1.356499	1.359378	1.362226	1.365044	1.367834	1.370595
3.46	1.355758	1.358676	1.361563	1.364419	1.367246	1.370043	1.372813
3.49	1.357907	1.360834	1.363729	1.366593	1.369428	1.372234	1.375011
3.52	1.360038	1.362973	1.365876	1.368749	1.371592	1.374405	1.377190
3.55	1.362150	1.365093	1.368005	1.370886	1.373736	1.376558	1.379350
3.58	1.364245	1.367196	1.370116	1.373005	1.375863	1.378692	1.381492
3.61	1.366322	1.369281	1.372209	1.375106	1.377972	1.380808	1.383616
3.64	1.368382	1.371349	1.374285	1.377189	1.380063	1.382907	1.385722
3.67	1.370425	1.373400	1.376343	1.379255	1.382137	1.384988	1.387811
3.70	1.372452	1.375435	1.378386	1.381305	1.384194	1.387053	1.389882
3.73	1.374462	1.377453	1.380411	1.383338	1.386234	1.389100	1.391937
3.76	1.376456	1.379455	1.382421	1.385355	1.388258	1.391132	1.393975
3.79	1.378435	1.381441	1.384414	1.387356	1.390266	1.393147	1.395998
3.82	1.380399	1.383412	1.386392	1.389341	1.392259	1.395146	1.398004
3.85	1.382347	1.385367	1.388355	1.391311	1.394236	1.397130	1.399994
3.88	1.384280	1.387308	1.390303	1.393266	1.396197	1.399098	1.401970
3.91	1.386199	1.389234	1.392236	1.395206	1.398144	1.401052	1.403930
3.94	1.388104	1.391146	1.394154	1.397131	1.400076	1.402991	1.405875
3.97	1.389994	1.393043	1.396059	1.399042	1.401994	1.404915	1.407806
4.00	1.391871	1.394926	1.397949	1.400939	1.403897	1.406825	1.409722
4.03	1.393733	1.396796	1.399825	1.402822	1.405787	1.408721	1.411625
4.06	1.395583	1.398652	1.401688	1.404691	1.407663	1.410603	1.413513
4.09	1.397419	1.400495	1.403537	1.406547	1.409525	1.412472	1.415388
4.12	1.399242	1.402325	1.405374	1.408390	1.411374	1.414327	1.417249
4.15	1.401052	1.404142	1.407197	1.410220	1.413210	1.416169	1.419097
4.18	1.402850	1.405946	1.409008	1.412037	1.415033	1.417998	1.420933
4.21	1.404636	1.407738	1.410806	1.413841	1.416844	1.419815	1.422755
4.24	1.406409	1.409517	1.412591	1.415633	1.418642	1.421619	1.424565
4.27	1.408170	1.411284	1.414365	1.417412	1.420427	1.423410	1.426362
4.30	1.409919	1.413040	1.416127	1.419180	1.422201	1.425190	1.428148
4.33	1.411657	1.414784	1.417877	1.420936	1.423963	1.426957	1.429921
4.36	1.413383	1.416516	1.419615	1.422680	1.425713	1.428713	1.431682
4.39	1.415098	1.418237	1.421342	1.424413	1.427451	1.430457	1.433432
4.42	1.416801	1.419946	1.423057	1.426134	1.429178	1.432190	1.435170
4.45	1.418494	1.421645	1.424761	1.427844	1.430894	1.433911	1.436897
4.48	1.420176	1.423333	1.426455	1.429543	1.432599	1.435622	1.438613
4.51	1.421847	1.425010	1.428138	1.431232	1.434292	1.437321	1.440318

TABLE I. (CONTINUED)

S	T						
	3.80	3.85	3.90	3.95	4.00	4.05	4.10
3.04	1.342404	1.344998	1.347567	1.350111	1.352632	1.355129	1.357603
3.07	1.344927	1.347530	1.350108	1.352662	1.355192	1.357698	1.360180
3.10	1.347424	1.350036	1.352624	1.355186	1.357725	1.360240	1.362731
3.13	1.349895	1.352517	1.355113	1.357685	1.360232	1.362756	1.365256
3.16	1.352342	1.354972	1.357578	1.360158	1.362714	1.365246	1.367755
3.19	1.354764	1.357404	1.360018	1.362607	1.365171	1.367712	1.370229
3.22	1.357162	1.359811	1.362434	1.365031	1.367604	1.370153	1.372678
3.25	1.359538	1.362195	1.364826	1.367432	1.370013	1.372570	1.375104
3.28	1.361890	1.364556	1.367195	1.369810	1.372399	1.374964	1.377506
3.31	1.364220	1.366894	1.369542	1.372165	1.374762	1.377335	1.379885
3.34	1.366529	1.369211	1.371867	1.374498	1.377103	1.379684	1.382241
3.37	1.368816	1.371506	1.374171	1.376809	1.379422	1.382011	1.384576
3.40	1.371082	1.373781	1.376453	1.379099	1.381720	1.384316	1.386888
3.43	1.373328	1.376035	1.378714	1.381368	1.383997	1.386601	1.389180
3.46	1.375554	1.378268	1.380956	1.383617	1.386253	1.388864	1.391451
3.49	1.377760	1.380482	1.383177	1.385846	1.388490	1.391108	1.393702
3.52	1.379947	1.382676	1.385374	1.388055	1.390706	1.393332	1.395933
3.55	1.382115	1.384852	1.387562	1.390246	1.392903	1.395536	1.398144
3.58	1.384264	1.387009	1.389726	1.392417	1.395082	1.397722	1.400337
3.61	1.386395	1.389147	1.391872	1.394570	1.397242	1.399888	1.402510
3.64	1.388509	1.391268	1.393999	1.396704	1.399383	1.402037	1.404665
3.67	1.390605	1.393371	1.396109	1.398821	1.401507	1.404167	1.406803
3.70	1.392683	1.395456	1.398202	1.400921	1.403613	1.406280	1.408922
3.73	1.394745	1.397525	1.400277	1.403003	1.405702	1.408376	1.411024
3.76	1.396790	1.399577	1.402336	1.405069	1.407774	1.410454	1.413109
3.79	1.398819	1.401613	1.404379	1.407118	1.409830	1.412516	1.415177
3.82	1.400832	1.403633	1.406405	1.409150	1.411869	1.414562	1.417229
3.85	1.402830	1.405636	1.408415	1.411167	1.413892	1.416591	1.419265
3.88	1.404812	1.407625	1.410410	1.413168	1.415900	1.418605	1.421285
3.91	1.406778	1.409598	1.412390	1.415154	1.417892	1.420603	1.423289
3.94	1.408730	1.411556	1.414354	1.417125	1.419869	1.422586	1.425278
3.97	1.410667	1.413500	1.416304	1.419081	1.421831	1.424554	1.427252
4.00	1.412590	1.415429	1.418239	1.421022	1.423778	1.426507	1.429211
4.03	1.414499	1.417344	1.420160	1.422949	1.425711	1.428446	1.431155
4.06	1.416393	1.419244	1.422067	1.424862	1.427629	1.430370	1.433085
4.09	1.418274	1.421131	1.423960	1.426761	1.429534	1.432281	1.435002
4.12	1.420142	1.423005	1.425839	1.428646	1.431425	1.434178	1.436904
4.15	1.421996	1.424865	1.427705	1.430518	1.433303	1.436061	1.438792
4.18	1.423837	1.426712	1.429558	1.432376	1.435167	1.437930	1.440668
4.21	1.425665	1.428546	1.431394	1.434222	1.437018	1.439787	1.442530
4.24	1.427481	1.430367	1.433225	1.436054	1.438856	1.441631	1.444379
4.27	1.429284	1.432176	1.435040	1.437874	1.440681	1.443461	1.446215
4.30	1.431075	1.433973	1.436842	1.439682	1.442495	1.445280	1.448039
4.33	1.432854	1.435757	1.438632	1.441477	1.444295	1.447086	1.449850
4.36	1.434621	1.437530	1.440410	1.443261	1.446084	1.448880	1.451644
4.39	1.436376	1.439291	1.442176	1.445032	1.447861	1.450662	1.453436
4.42	1.438120	1.441040	1.443930	1.446792	1.449626	1.452432	1.455211
4.45	1.439852	1.442778	1.445673	1.448540	1.451379	1.454190	1.456975
4.48	1.441574	1.444504	1.447405	1.450277	1.453121	1.455937	1.458727
4.51	1.443284	1.446220	1.449125	1.452003	1.454852	1.457673	1.460468

TABLE 1. (CONTINUED)

S	4.15	4.20	4.25	4.30	4.35	4.40	4.45
3.04	1.360054	1.362484	1.364891	1.367278	1.369644	1.371990	1.374315
3.07	1.362641	1.365079	1.367495	1.369890	1.372265	1.374619	1.376952
3.10	1.365200	1.367647	1.370072	1.372475	1.374858	1.377220	1.379561
3.13	1.367734	1.370189	1.372622	1.375033	1.377424	1.379794	1.382143
3.16	1.370241	1.372704	1.375146	1.377565	1.379964	1.382342	1.384699
3.19	1.372723	1.375195	1.377644	1.380071	1.382478	1.384863	1.387228
3.22	1.375181	1.377660	1.380117	1.382553	1.384967	1.387360	1.389732
3.25	1.377614	1.380101	1.382566	1.385009	1.387431	1.389832	1.392212
3.28	1.380024	1.382519	1.384991	1.387442	1.389871	1.392279	1.394667
3.31	1.382410	1.384913	1.387393	1.389851	1.392288	1.394703	1.397098
3.34	1.384774	1.387285	1.389772	1.392238	1.394682	1.397104	1.399506
3.37	1.387116	1.389634	1.392129	1.394602	1.397053	1.399482	1.401891
3.40	1.389437	1.391962	1.394464	1.396944	1.399402	1.401838	1.404254
3.43	1.391736	1.394268	1.396777	1.399264	1.401729	1.404173	1.406595
3.46	1.394014	1.396553	1.399070	1.401564	1.404035	1.406486	1.408915
3.49	1.396272	1.398818	1.401342	1.403842	1.406321	1.408778	1.411213
3.52	1.398510	1.401063	1.403593	1.406101	1.408586	1.411049	1.413492
3.55	1.400728	1.403288	1.405825	1.408339	1.410831	1.413301	1.415750
3.58	1.402927	1.405494	1.408038	1.410558	1.413057	1.415533	1.417988
3.61	1.405108	1.407681	1.410231	1.412759	1.415263	1.417746	1.420207
3.64	1.407269	1.409850	1.412406	1.414940	1.417451	1.419940	1.422407
3.67	1.409413	1.412000	1.414563	1.417103	1.419620	1.422115	1.424589
3.70	1.411539	1.414132	1.416702	1.419248	1.421771	1.424273	1.426752
3.73	1.413648	1.416247	1.418823	1.421375	1.423905	1.426412	1.428897
3.76	1.415739	1.418345	1.420926	1.423485	1.426021	1.428534	1.431025
3.79	1.417814	1.420425	1.423013	1.425578	1.428120	1.430639	1.433136
3.82	1.419872	1.422490	1.425084	1.427654	1.430202	1.432727	1.435229
3.85	1.421913	1.424537	1.427137	1.429714	1.432267	1.434798	1.437306
3.88	1.423939	1.426569	1.429175	1.431757	1.434316	1.436853	1.439367
3.91	1.425949	1.428585	1.431197	1.433785	1.436350	1.438892	1.441412
3.94	1.427944	1.430586	1.433203	1.435797	1.438368	1.440915	1.443440
3.97	1.429924	1.432571	1.435195	1.437794	1.440370	1.442923	1.445454
4.00	1.431889	1.434542	1.437171	1.439776	1.442357	1.444916	1.447452
4.03	1.433839	1.436498	1.439132	1.441743	1.444330	1.446894	1.449435
4.06	1.435775	1.438439	1.441079	1.443695	1.446287	1.448857	1.451403
4.09	1.437697	1.440366	1.443012	1.445633	1.448231	1.450805	1.453357
4.12	1.439604	1.442280	1.444930	1.447557	1.450160	1.452740	1.455297
4.15	1.441498	1.444179	1.446835	1.449467	1.452075	1.454660	1.457222
4.18	1.443379	1.446065	1.448727	1.451364	1.453977	1.456567	1.459134
4.21	1.445246	1.447938	1.450605	1.453247	1.455865	1.458460	1.461033
4.24	1.447101	1.449797	1.452469	1.455117	1.457740	1.460340	1.462917
4.27	1.448942	1.451644	1.454321	1.456974	1.459602	1.462207	1.464789
4.30	1.450771	1.453478	1.456160	1.458818	1.461451	1.464061	1.466648
4.33	1.452588	1.455300	1.457987	1.460649	1.463288	1.465903	1.468494
4.36	1.454392	1.457109	1.459801	1.462468	1.465112	1.467731	1.470328
4.39	1.456184	1.458906	1.461603	1.464275	1.466924	1.469548	1.472149
4.42	1.457964	1.460691	1.463393	1.466070	1.468723	1.471352	1.473958
4.45	1.459733	1.462465	1.465171	1.467853	1.470511	1.473145	1.475755
4.48	1.461490	1.464227	1.466938	1.469625	1.472287	1.474926	1.477541
4.51	1.463235	1.465977	1.468693	1.471385	1.474052	1.476695	1.479314

TABLE 1. (CONTINUED)

S	4.50	4.55	4.60	4.65	4.70	4.75	4.80
3.04	1.376621	1.378908	1.381176	1.383425	1.385656	1.387869	1.390064
3.07	1.379266	1.381561	1.383837	1.386094	1.388332	1.390553	1.392756
3.10	1.381883	1.384186	1.386469	1.388734	1.390980	1.393208	1.395419
3.13	1.384473	1.386783	1.389074	1.391347	1.393600	1.395836	1.398054
3.16	1.387036	1.389354	1.391653	1.393932	1.396193	1.398436	1.400661
3.19	1.389573	1.391899	1.394204	1.396491	1.398760	1.401010	1.403241
3.22	1.392085	1.394417	1.396731	1.399025	1.401300	1.403557	1.405796
3.25	1.394571	1.396911	1.399232	1.401533	1.403815	1.406079	1.408325
3.28	1.397034	1.399380	1.401708	1.404016	1.406305	1.408576	1.410828
3.31	1.399472	1.401826	1.404160	1.406475	1.408771	1.411049	1.413308
3.34	1.401887	1.404248	1.406589	1.408911	1.411213	1.413497	1.415763
3.37	1.404279	1.406647	1.408994	1.411323	1.413632	1.415923	1.418195
3.40	1.406648	1.409023	1.411378	1.413713	1.416028	1.418325	1.420604
3.43	1.408996	1.411377	1.413739	1.416080	1.418402	1.420706	1.422990
3.46	1.411323	1.413710	1.416078	1.418426	1.420754	1.423064	1.425355
3.49	1.413628	1.416022	1.418396	1.420750	1.423085	1.425401	1.427698
3.52	1.415913	1.418313	1.420693	1.423054	1.425395	1.427717	1.430020
3.55	1.418177	1.420584	1.422970	1.425337	1.427684	1.430012	1.432321
3.58	1.420422	1.422835	1.425227	1.427600	1.429953	1.432287	1.434602
3.61	1.422647	1.425066	1.427465	1.429843	1.432202	1.434542	1.436863
3.64	1.424853	1.427278	1.429683	1.432068	1.434432	1.436778	1.439104
3.67	1.427041	1.429472	1.431883	1.434273	1.436644	1.438995	1.441327
3.70	1.429210	1.431647	1.434064	1.436460	1.438836	1.441193	1.443530
3.73	1.431361	1.433804	1.436226	1.438628	1.441010	1.443373	1.445716
3.76	1.433495	1.435944	1.438372	1.440779	1.443167	1.445534	1.447883
3.79	1.435611	1.438066	1.440499	1.442912	1.445305	1.447679	1.450032
3.82	1.437711	1.440171	1.442610	1.445028	1.447427	1.449805	1.452165
3.85	1.439793	1.442259	1.444703	1.447127	1.449531	1.451915	1.454280
3.88	1.441859	1.444330	1.446780	1.449210	1.451619	1.454008	1.456378
3.91	1.443910	1.446386	1.448841	1.451276	1.453690	1.456085	1.458460
3.94	1.445944	1.448426	1.450886	1.453326	1.455746	1.458145	1.460525
3.97	1.447962	1.450450	1.452915	1.455361	1.457785	1.460190	1.462575
4.00	1.449966	1.452458	1.454929	1.457380	1.459809	1.462219	1.464609
4.03	1.451954	1.454452	1.456928	1.459383	1.461818	1.464233	1.466628
4.06	1.453928	1.456430	1.458912	1.461372	1.463812	1.466232	1.468631
4.09	1.455887	1.458395	1.460881	1.463346	1.465791	1.468215	1.470620
4.12	1.457831	1.460344	1.462836	1.465306	1.467756	1.470185	1.472594
4.15	1.459762	1.462280	1.464776	1.467251	1.469706	1.472140	1.474554
4.18	1.461679	1.464202	1.466703	1.469183	1.471642	1.474081	1.476500
4.21	1.463582	1.466110	1.468616	1.471101	1.473564	1.476008	1.478431
4.24	1.465472	1.468004	1.470515	1.473005	1.475473	1.477921	1.480349
4.27	1.467349	1.469886	1.472401	1.474896	1.477369	1.479821	1.482254
4.30	1.469212	1.471754	1.474274	1.476773	1.479251	1.481708	1.484145
4.33	1.471063	1.473610	1.476135	1.478638	1.481120	1.483582	1.486024
4.36	1.472901	1.475453	1.477982	1.480490	1.482977	1.485443	1.487889
4.39	1.474727	1.477283	1.479817	1.482330	1.484821	1.487292	1.489742
4.42	1.476541	1.479102	1.481640	1.484157	1.486653	1.489128	1.491582
4.45	1.478343	1.480908	1.483451	1.485972	1.488472	1.490952	1.493410
4.48	1.480133	1.482702	1.485250	1.487775	1.490280	1.492763	1.495226
4.51	1.481911	1.484485	1.487037	1.489567	1.492075	1.494563	1.497031

Table II. Comparison of Debye θ 's based on interpolated values of $G(S, \tau)$ obtained from Table I with corresponding θ 's obtained by other authors either by interpolations of their tables or by direct computation. Elastic constants are in units of 10^{12} dyn-cm⁻², units of (N/V) are 10^{22} cm⁻³ (N is number of atoms per mol, V the molar volume), density units are gm-cm⁻³, and the computed θ 's are in degrees Kelvin. For present purposes we treat the cubic crystal c_{ij} 's listed as exact quantities.

	c_{11}	c_{12}	c_{44}	(N/V)	ρ	de Launay	Quimby and Sutton ^j	Betts ^k et al.	Alers and Neighbours ^m	Present Work ⁿ
Cu	1.7620 ^a	1.2494	0.8177	8.553	9.018	344.5 ^h	344.4	345.4	344.4	344.38
Ag	1.3149 ^b	0.9733	0.5109	5.938	10.365	226.4 ^h	226.6	227.1	226.4	226.42
Au	2.0163 ^b	1.6967	0.4544	5.953	19.488	161.7 ^h	162.1	162.2	161.6	161.65
Al	1.230 ^c	0.708	0.3090	6.109	2.734	427.4 ^h	428.5	428.7	428.2	428.43
Li	0.1574 ^d	0.1333	0.1158	4.748	0.5471	334.6 ^h		338.4	335.9	334.77
NaCl	0.5750 ^e	0.0986	0.1327	4.619	2.241	320.4 ⁱ	321.6	321	321.9	321.46
KBr	0.418 ^f	0.056	0.052	2.854	2.819	172.2 ⁱ		171.7	172.8	172.18
LiF	1.246 ^g	0.424	0.649	12.292	2.646	734.4 ^h	734.6	734	734.1	734.50

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^h See Ref. 6; they use de Launay's central difference interpolation formula to compute θ from his tables.

ⁱ These values were obtained by linear two-dimensional interpolation of de Launay's tables in Ref. 4.

^j See Ref. 13

^k See Ref. 14

^m See Ref. 6

ⁿ Computed with aid of the new tables of the function $G(S, \tau)$ and Eq. (23). Elastic constants are used as given in this table and Ref. 6 and thereafter treated as exact quantities. The same holds for the density ρ and for (N/V) .

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