TABLE ERRATA


On p. 10, line 3 of Formula 111.04 is not valid unless \( \alpha^2 > 0 \) and \( \alpha \sin \varphi < 1 \); it should be replaced by

\[
\Pi(\varphi, \alpha^2, 1) = \frac{1}{1 - \alpha^2} \left[ \ln(\tan \varphi + \sec \varphi) - \alpha \ln \sqrt{\frac{1 + \alpha \sin \varphi}{1 - \alpha \sin \varphi}} \right], \quad \alpha^2 > 0;
\]

\[
= \frac{1}{1 - \alpha^2} \left[ \ln(\tan \varphi + \sec \varphi) + |\alpha| \tan^{-1}(|\alpha| \sin \varphi) \right], \quad \alpha^2 < 0.
\]

On p. 14, line 5 of Formula 117.03 is incorrect; the argument of the inverse tangent should read

\[
\frac{\sqrt{\alpha^2(k^2 - \alpha^2)}}{(1 - k^2 \sin^2 \varphi)(1 - \alpha^2)} \sin \varphi \cos \varphi
\]

rather than

\[
\frac{\sqrt{\alpha^2 - k^2}}{(1 - k^2 \sin^2 \varphi)(1 - \alpha^2)} \sin \varphi \cos \varphi.
\]

On p. 251, Formula 562.03 is incorrect; it should read

\[
\int_0^\infty e^{-pt}\left[ I_0^2(rt) + 2rtI_0(rt)I_1(rt) \right] dt = \frac{2p}{\pi(p^2 - 4r^2)} E, \quad k = 2r/p.
\]

On p. 251, Formula 562.04 is incorrect; it should read

\[
\int_0^\infty e^{-pt} I_0^2(rt) dt = \frac{2K}{\pi p}, \quad k = 2r/p.
\]

It should be noted that this last error appears also in Tables of Integral Transforms, Vol. 1, by Erdélyi et al., in Section 4.16, Formula 10 (p. 196).

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The following corrections should be made in the cosine transform numbered 1.3(29), on p. 14: The term \( \Gamma(\mu - \frac{1}{2}v) \) should read \( \Gamma(\mu - \frac{1}{2}v + 1) \), and the term

\[
_{1}F_{2}\left( \mu + 1 - \frac{\nu}{2}, \mu - \frac{\nu}{2} + \frac{3}{2}, \frac{\alpha^2 y^2}{4} \right)
\]

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should read

\[ _1F_2 \left( \mu + 1; \mu + 1 - \frac{\nu}{2}, \mu - \frac{\nu}{2} + \frac{3}{2} \frac{a^2 y^2}{4} \right). \]

The emended formula can be checked by setting \( \nu = -\frac{1}{2} \) in formula 8.5(21) appearing on p. 24 of v. II of this work.

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Table I (p. 131–191) includes a listing of the residue-index, \( \gamma \), of 2 modulo \( p \), for all odd primes \( p \) less than 300,000.

Errors therein have been noted by D. H. Lehmer [1, 3], A. E. Western [2], and Lehmer and F. Gruenberger [4].

In 1962 J. D. Swift prepared a computer list of values of \( \gamma \) for all odd primes less than a million. At the suggestion of Professors Lehmer and Swift, I have compared the new, unpublished list with the corresponding data of Kraitchik, and thereby discovered a total of 324 new errors in the latter’s table. The great majority of these new corrections apply to that part of the table corresponding to \( p > 10^5 \).

A copy of the complete list of errata in Kraitchik’s tabulation of \( \gamma \) has been deposited in the UMT file of this journal.

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On page 539, in the table entitled Special Constants, the terminal decimal digits in the 15D approximations to \( \pi^{-1}, (2\pi)^{1/2}, \) and \( (2\pi)^{-1/2} \) should each be increased by a unit.

Charles R. Sexton


In addition to the errata listed in *MTAC*, v. 8, 1954, p. 29, the following errors have been noted.
Following is a list of errors contained in these two tables of Mertens’ function. The author has good reasons to believe that this list is complete. Owing to the methods of examination employed, no error should have been possibly left out in the first table, and any omission in the second table should be very unlikely. For the sake of completeness all errors already known and all misprints (as far as function values are concerned) have been included. The new values given have been computed several times and by independent methods so that there can be no reasonable doubt about their reliability. The only question remaining is why von Sterneck did not discover these errors, especially for the arguments 400000 and 440000, for which he carried out some strong checks which confirmed his values. The author suspected in an earlier paper (Numerische Mathematik, v. 5, 1963, p. 1–13) that these checks might have been based on wrong values in the first table. This conjecture was not supported by the examination of this table. Though all values possibly used in these checks were carefully examined, all were found to be right. Thus the question of this strange coincidence of errors remains unsolved.

The three columns below give the arguments $x$, the values $\sigma^*(x)$ from von Sterneck’s tables, and the true values $\sigma(x)$. Obvious misprints have been indicated by $\ldots$ in the $\sigma^*$-column, dots in the $x$-column indicate an interval, the first and last argument of which are explicitly given. For these intervals the $\sigma$-values are given in terms of the $\sigma^*$.
It should be mentioned further that in the first table on p. 973 the last two columns should be marked 110200 and 110250 instead of 110250 and 110300.

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table errata

358.—(a) A. V. Lebedev & R. M. Federova, Spravočnik po matematicheskim
tablitsam, Akad. Nauk, Moscow, 1956. [See RMT 49, MTAC, v. 11,
1957, p. 104–106.]

(b) A. V. Lebedev & R. M. Federova, A Guide to Mathematical Tables,

(c) N. M. Burunova, Spravočnik po matematicheskim tablitsam, Dopolnenie
N.1, Akad. Nauk, Moscow, 1959. [See RMT 1, Math. Comp., v. 15,
1961, p. 81.]

(d) N. M. Burunova, A Guide to Mathematical Tables, Supplement No. 1,

The following misprint originating on p. 157 of (a) has been reproduced in
(b), (c), and (d).

\[ \int_{1}^{\infty} e^{-xt} t^n \, dt = \frac{1}{x^{n+1}} \int_{1}^{\infty} e^{-t} t^n \, dt, \]
\[ \int_{1}^{\infty} e^{-xt} t^n \, dt = \frac{1}{x^{n+1}} \int_{1}^{\infty} e^{-t} t^n \, dt. \]

This correction is required also in (b), (c), and (d), as follows: (b), p. 157; (c), p.
36; and (d), p. 36.

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CORRIGENDA

A. C. R. Newbery, “Multistep integration formulas,” Math. Comp., v. 17,

On p. 454, the element in the fifth row and second column of the corrector matrix
corresponding to \( K = 5 \) should read \(-4032\) instead of \(-4042\).

A. C. R. Newbery

John R. B. Whittlesey, “Incomplete gamma functions for evaluating Erlang

On p. 12, in section 3C, the continued fraction expression for \( G_a(x) \) should read

\[ G_a(x) = H_a(x) \left( \frac{a}{x} + \frac{a_1}{b_1 + a_2} \right) \left( \frac{b_2 + a_3}{b_3 + \cdots} \right) \]

This typographical error does not affect either the single- or double-precision FORT-
RAN subroutines referred to in this paper.

On p. 14, in Fig. 2, for the double precision FORTRAN subroutine the “regions
of \( x \)” should cover the range \( 0 < x < 7, 7 \leq x \leq A_1 \) instead of \( 0 < x < 1, \)
\( 1 \leq x \leq A_1 \). This affects the double-precision subroutine output for \( G_a(x) \) only
for \( a < 1, 1 \leq x < 1.35 \). A corrected version of this program has been submitted to
SHARE.

John R. B. Whittlesey