

TABLE ERRATA

427.—A. ERDÉLYI, W. MAGNUS, F. OBERHETTINGER & F. G. TRICOMI, *Tables of Integral Transforms*, Vols. I and II, McGraw-Hill Book Co., New York, 1954.

In Volume I, p. 205, formula 18 should be corrected to read

$$\int_b^\infty e^{-pt} \left( \frac{t-b}{t+b} \right)^{\nu/2} K_\nu [a(t^2 - b^2)^{1/2}] dt = \frac{\Gamma(\nu + 1)}{2sa^\nu} [x^\nu e^{-bs} \Gamma(-\nu, bx) - y^\nu e^{bs} \Gamma(-\nu, by)],$$

where  $x = p - s$ ,  $y = p + s$ ,  $s = (p^2 - a^2)^{1/2}$ ,  $\text{Re}(p + a) > 0$ ,  $|\text{Re}(\nu)| < 1$ .

In Volume II, p. 377, the factor  $e^{-\alpha/2 \sinh t}$  should be inserted in the right member of formula 32. Also, on p. 378, in formula 40 the factor  $\pi/2$  should be replaced by  $\pi^2/4$ .

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EDITORIAL NOTE: For previous notices of errata in these volumes, see *Math. Comp.*, v. 15, 1961, pp. 319–321, MTE 304; v. 18, 1964, pp. 532–533, MTE 353; v. 19, 1965, p. 361, MTE 367; v. 20, 1966, p. 641, MTE 401.

428.—I. S. GRADSHTEYN & I. M. RYZHIK, *Table of Integrals, Series, and Products*, fourth edition, prepared by Yu. V. GERONIMUS & M. Yu. TSEYTLIN, Academic Press, New York, 1965. [See *Math. Comp.*, v. 20, 1966, pp. 616–617, RMT 85; *ibid.*, v. 21, 1967, pp. 293–294, MTE 408.]

The fourth edition of these tables is considerably enlarged over the third edition, but many of the errors in the latter have not been corrected in this latest edition, and are accordingly included in the following list of corrections, except when they have been previously noted in the references cited in the heading.

Page	Formula	Correction
2	0.126	For $k = 1$ , read $k = 0$ .
	0.131	For $A_4 = \frac{19}{80}$ , read $A_4 = \frac{19}{120}$ .
22	1.216(2)	For $+\frac{7x^4}{4!}$ , read $-\frac{7x^4}{4!}$ .
27	1.331(2)	Delete coefficient $\text{sh } x$ in first equation.
32	1.361(3)	Multiply right side by $\frac{1}{2}$ .
	1.371(2)	Right member should read $\dots - \frac{1}{2^{2n}} \text{ctg}^2 \frac{x}{2^n}$ .
35	1.413(1)	For $2^{2k}$ , read $2^{2k-1}$ .
	1.413(3)	Delete central member = $x \sec x - \dots$ .

<i>Page</i>	<i>Formula</i>	<i>Correction</i>
36	1.413(4)	Delete central member = $x \operatorname{cosec} x + \dots$ .
	1.421(3)	Last summation should read $\sum_{\substack{k=-\infty \\ k \neq 0}}^{\infty}$
37	1.434	For $1 + \sin x$ on left side, read $\cos^2 x$ ; on right side, for $\frac{1}{8}$ , read $\frac{1}{4}$ .
38	1.442(4)	Right side should read $\frac{\pi}{4} \left[ 0 < x < \frac{\pi}{2} \right]$ $- \frac{\pi}{4} \left[ \frac{\pi}{2} < x < \pi \right]$
	1.443(1)	Delete $(-1)^k$ .
39	1.443(2)	Delete $(-1)^k$ . For $(-1)^n$ , read $(-1)^{n-1}$ (two places).
	1.444(5)	For $k = 1$ , read $k = 0$ .
	1.444(6)	For $k = 1$ , read $k = 0$ .
42	1.463(1 & 2)	For $n$ , read $k$ everywhere.
86	2.271(6)	For $\binom{n-1}{k}$ , read $\binom{n-1}{k}$ .
135	2.519(2)	For $2l - 2$ , read $2l - 3$ .
364	3.557(5)	For $\operatorname{ch} x - \cos \lambda$ , read $\operatorname{ch} x + \cos \lambda$ ; for $2\Gamma(q + 1)$ , read $\Gamma(q + 1)$ .
527	4.224(13)	For $2^k \cdot k!$ , read $2^{2k}(k!)^2$ .
533	4.233(2)	For $-1.171\ 953\ 619\ 35$ , read $-1.171\ 953\ 619\ 34$ .
	4.233(3)	For $-0.157\ 660\ 149\ 15$ , read $-0.157\ 660\ 149\ 17$ .
554	4.285	For $q > 0$ , read $q < 0$ .
909	8.129(1)	For $\sqrt[3]{2}$ , read $\sqrt{2}$ .
	8.129(3)	For $\pi/18$ , read $\pi/12$ .
93 <sub>1</sub>	8.254	For $\sum_{k=0}^{\infty}$ , read $\sum_{k=0}^{n-1}$ .
936	8.326(1)	On left side, for $\Gamma(x)$ , read $[\Gamma(x)]^2/\Gamma(2x)$ .
	8.326(2)	For $\Gamma(y)$ , read $\Gamma(x)$ .
939	8.342(2)	For $\{1 - \zeta(2n + 1)\}$ , read $\{\zeta(2n + 1)\}$ .
948	8.375(1)	For $p = 1, 2, 3, \dots$ , read $p = 1, 2, 3, \dots, q - 1$ .
950	8.383	For $B(x, y)$ , read $B(x + 1, y + 1)(x + y + 1)$ . For $x, y \neq 0, -1, -2, \dots$ , read $x, y \neq -1, -2, \dots$ . For $k = 0$ , read $k = 1$ .
960	8.444(2)	Add the comment: Omit the term containing the sum over $m$ when $k = 1$ .
961	8.446	For $Cz$ , read $e^C z$ . Add the note: Omit the term $\sum_{k=1}^l \frac{1}{k}$ when $l = 0$ .
967	8.467	For $+(-1)^{n+1}$ , read $\pm(-1)^{n+1}$ .

<i>Page</i>	<i>Formula</i>	<i>Correction</i>
973	8.511(3)	For $k = 0$ on the first sum, read $k = 1$ .
	8.511(4)	For $1 + \dots$ , read $J_0(z) + \dots$ .
	8.512(1)	For $k = 0$ , read $k = 1$ .
	8.512(3)	For $\sqrt{2z}$ , read $\sqrt{\frac{2z}{\pi}}$ .
974	8.513(2)	For $\binom{m}{k}$ , read $\binom{k}{m}$ .
1021	8.844(1 & 2)	
1022	8.844(3)	For $\cos m\phi$ , read $\cos k\phi$ .
1025	8.911(1)	For $\frac{(2n)!}{n(n!)^2}$ , read $\frac{(2n)!}{2^n(n!)^2}$ .
	8.911(4)	For $2^{n-1}$ , read $2^n$ .
1028	8.924(1)	For 9062.1, read 9060.1 in reference.
	8.924(3)	For $+n \sum_{k=1}^{\infty}$ , read $-n \sum_{k=1}^{E(n/2)}$ .
	8.924(4)	Interchange order of $\frac{n}{2^{n+2k+1}}$ and $\sum_{k=0}^{\infty}$ .
1029	8.928(1)	For <b>K</b> , read <b>K</b> ( $\sin \theta$ ).
	8.928(2)	For <b>E</b> , read <b>E</b> ( $\sin \theta$ ).
1033	8.951	For $\sqrt{2^n}$ , read $2^n$ .
1073	9.521(2)	For $[\operatorname{Re}(z) > 0]$ , read $[\operatorname{Re}(z) < 0, 0 < q \leq 1]$ .
1076-7	9.612	Add the condition: $n \neq 1$ .
1077	9.621	For $t^n$ , read $t^{n-1}$ .
1079	9.635(1)	For $E_{n-1}$ , read $E_{n-1} + 4(-1)^n(3^{n-1} - 1)B_1$ .
	9.635(2)	Add the condition: $n \geq 2$ .
	9.635(3)	For left side, read $-\left(B + \frac{1}{4}\right)^{2n+1}$ .

In the bibliography on p. 1081 the abbreviation for the second reference should read AK instead of AD.

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<i>Page</i>	<i>Formula</i>	<i>Correction</i>
578	4.358(2)	For $\zeta(2, \nu - 1)$ , read $\zeta(2, \nu)$ .
	4.358(3)	The right side should read $\Gamma(\nu)\mu^{-\nu}[(\psi(\nu) - \ln \mu)^3 + 3\zeta(2, \nu)(\psi(\nu) - \ln \mu) - 2\zeta(3, \nu)]$ .
929	8.232(2)	For $-\ln(x)$ , read $+\ln(x)$ .

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<i>Page</i>	<i>Formula</i>	<i>Correction</i>
722	6.646(3)	The correct form of this formula is $\int_b^\infty e^{-pt} \left( \frac{t-b}{t+b} \right)^{\nu/2} K_\nu [a(t^2 - b^2)^{1/2}] dt =$ $\frac{\Gamma(\nu + 1)}{2sa^\nu} [x^\nu e^{-bs} \Gamma(-\nu, bx) - y^\nu e^{bs} \Gamma(-\nu, by)].$ where $x = p - s$ , $y = p + s$ , $s = (p^2 - a^2)^{1/2}$ , $\text{Re}(p + a) > 0$ , $ \text{Re}(\nu)  < 1$ .
722	6.647(3) 6.648	Insert the factor $e^{-\alpha/2 \sinh t}$ on the right side. In the integrand, for $\left( \frac{\alpha + \beta e^x}{\alpha e^x + \beta} \right), \quad \text{read} \left( \frac{\alpha + \beta e^x}{\alpha e^x + \beta} \right)^\nu.$
739	6.681(13) 6.682(1)	The factor $\pi/2$ should be replaced by $\pi^2/4$ . The integrand should read $J_{\nu-1/2}(x \sin t) \sin^{\nu+1/2} t.$

The derivation of the correct form of 6.646(3) has recently been given by W. Sollfrey (*SIAM Rev.*, v. 9, 1967, pp. 586-589).

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<i>Page</i>	<i>Formula</i>	<i>Correction</i>
36	1.414(2)	For $-n^2 \sum_{k=1}^\infty$ , read $-n \sum_{k=1}^\infty$ .
843	7.411(1) 7.411(5)	For $L_{n+1}(t)$ , read $L_{n+1}(t)/(n+1)$ . For $L_k(x)$ , read $L_k(x)/k!$ .
920	8.174	For each $m$ , read $n$ .
943	8.362(2)	For $z$ in each place, read $x$ .
947	8.373(2)	For $\frac{1}{2 \sin \pi x}$ , read $\frac{\pi}{2 \sin \pi x}$ , and add $\ln 2$ to the right member.
976	8.521(4)	For $+\frac{1}{\sqrt{(2ki\pi - z)^2 + x^2 + y^2}}$ , read $-\frac{1}{\sqrt{(2ki\pi - z^2)^2 + x^2 + y^2}}$ .
1005	8.732(2)	For $(\nu + \mu)zQ_{\nu-1}^\mu(z)$ , read $(\nu + \mu)Q_{\nu-1}^\mu(z)$ .
1008	8.751(3)	For $Q_{-n-3/2}^\mu$ , read $Q_{n-3/2}^\mu$ ; for $z^{2n-\mu+3/2}$ , read $\pi^{1/2} z^{-n-\mu-3/2}$ .

<i>Page</i>	<i>Formula</i>	<i>Correction</i>
1010	8.772(3)	For $\left(\frac{z+1}{2}\right)^{-\nu}$ , read $\left(\frac{z+1}{2}\right)^{\nu}$ .
	8.773(1)	For $\mu + \frac{3}{2}$ , read $\nu + \frac{3}{2}$ .
1013	8.792	For $\sum_{k=1}^{\infty}$ , read $\sum_{k=0}^{\infty}$ .
1016	8.820(2)	For $\frac{\nu+3}{2}$ , read $\nu + \frac{3}{2}$ ,
1019	8.831(3)	For $2E\left(\frac{n-1}{2}\right)$ , read $E\left(\frac{n-1}{2}\right)$ .
1023	8.852(2)	For $2^{-m}$ , read $2^{-2m}$ .
1028	8.923	For $\sum_{k=0}^{\infty}$ , read $\sum_{k=1}^{\infty}$ , and add $\frac{\pi x}{2}$ to the right member.

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EDITORIAL NOTE: For notices of errata in earlier editions, see *Math. Comp.*, v. 14, 1960, pp. 401-403, MTE 293; v. 17, 1963, p. 102, MTE 326; v. 20, 1966, p. 468, MTE 392.

429.—YUDELL L. LUKE, *Integrals of Bessel Functions*, McGraw-Hill Book Co., New York, 1962\*

- P. 5: In the next to the last line before Section 1.3.2, for  $L_{pq}^t$ , read  $L_{pq}^t(-z)$ .
- P. 15, Eq. (2): For  $-\psi(1 + \beta_a + k) + \psi(1 + \beta_a)$ ,  
read  $-\psi(1 + \delta_s + k) + \psi(1 + \delta_s)$ .
- P. 17, Eq. (7): In the  ${}_{p+1}F_{q+1}$ , for  $b_q + m$ , read  $1 + b_q + m$ .
- P. 24, Eq. (16): In the finite sum, i.e., in  $\sum_{k=0}^{2n-1}$ , divide  $(2n - 1 - k)!$  by  $k!$ .  
The same correction should be made in the corresponding finite sums in Eqs. 4.2(2), 4.2(8), 4.2(10), 4.2(11) and 4.2(12), which are on pp. 96-99.
- P. 25, Eq. (21): For  $\pi(1 - \nu^2)$  in denominator of second term, read  $\nu\pi(1 - \nu^2)$ .
- P. 26, Eq. (10): Insert  $(-)^k$  behind  $\sum_{k=0}^{n-1}$ .
- P. 34, Eq. (3): For  $x^{-n}J_n(x)$  read  $(x/4)^{-n}J_n(x)$ .
- P. 76, Eq. (1): Insert  $(-)^k$  behind  $\sum_{k=0}^{p-1}$ .
- P. 98, Eq. (9): In the terms enclosed in [ ], replace  $k$  by  $m$ .

\* Reviewed in *Math. Comp.*, v. 17, 1963, pp. 318-320. I am indebted to W. T. Chen, Eldon R. Hansen, Jesper Hansen, F. Krückeberg, Merrell L. Patrick and K. Seebass for some of the data reported here.

P. 101, Eq. (8): In the expression for  $\beta$ , replace  $(\nu^2 - \frac{1}{4})$  by  $(\nu^2 - \frac{1}{4})^{-1}$ .

P. 104, Eq. (10): The constant term should read

$$-\frac{\Gamma(\mu + \nu + 1)\Gamma(\mu - \nu + 1)\cos\nu\pi}{2^\mu(3/2)_\mu\cos\mu\pi}$$

as in Eq. 4.5(5).

P. 125, Eq. (27): The second line of the right-hand side of this equation should read

$$= \int_0^z J_0(t)dt + J_{2n+1}(z) - 2 \sum_{k=0}^n J_{2k+1}(z).$$

P. 141: In the first line after 6.5, for 1.4.7, read 1.4.8.

P. 150, Eq. (13):

$$\text{For } 1 + 2 \sum_{k=1}^{\infty} \dots, \text{ read } I_0(z/2) + 2 \sum_{k=1}^{\infty} \dots.$$

P. 154: For the first line before Eq. (9) read as follows: complex plane with center at the origin and  $a$  is an integer or zero, then

P. 154, Eq. (9): Replace the right-hand side of this equality by

$$\frac{(-)^n m!}{(m-n)!(m+n+a+1)!},$$

P. 154, Eq. (10): Replace the right-hand side of the second equality by

$$\frac{(-)^n n!}{(2n+a+1)(n+a)!}, \text{ if } m = n.$$

P. 157: For the two lines following Eq. (25) read as follows: Define  $K = n + 1 - a/2$ . If  $a$  is bounded,  $z$  is fixed and nonzero, then

P. 159: For the two lines following Eq. (33) read as follows: Define  $K_1 = n + (1 - a)/2$ . Again if  $a$  is bounded,  $z$  is fixed and nonzero, then

P. 178, Eq. (32):

$$\text{For } \Phi\left(-\frac{n+1}{2}, \frac{1}{2}; z^2\right), \text{ read } \Phi\left(\frac{n+1}{2}, \frac{1}{2}; z^2\right).$$

P. 181: In the first line after Eq. (18), for  $ic(z)$  read  $rc(z)$ .

P. 211, Eq. (3): For  $y_{\alpha-1}(z)$ , read  $j_{\alpha-1}(z)$ .

P. 226, Eq. (5): In the second line of this equation, for  $\cos\nu\mu$ , read  $\cos\nu\pi$ .

P. 254, Eq. (1): The right-hand side should read

$$z\{kC_{\mu+1}(kz)D_\nu(lz) - lC_\mu(kz)D_{\nu+1}(lz)\} - (\mu - \nu)C_\mu(kz)D_\nu(lz).$$

P. 260, Eq. (29): For  $R(\mu + \nu + \rho)$ , read  $R(2\nu + \rho)$ .

P. 290, Eq. (1): For  $BJ_\nu(z)$ , read  $BY_\nu(z)$ .

P. 308, Eq. (1): In the second integral expression, for  $J_{\nu-1}(z \cos \theta)$ , read  $J_{\nu-1}(z \sin \theta)$ .

P. 325, Eq. (4): In the second line replace  $(a^2 - b^2)^{\mu-\nu+1}$  by  $(a^2 - b^2)^{\mu-\nu-1}$ .

P. 346, Eq. (14):

$$\text{For } \int_0^\infty \dots = A(x), \text{ read } \int_a^\infty \dots = A(x).$$

430.—W. MAGNUS & F. OBERHETTINGER, *Formeln und Sätze für die speziellen Funktionen der mathematischen Physik*, Springer, Berlin, 1948.

P. 119, Line 5: In place of the factor

$$\frac{\Gamma(2\mu + 1)}{(z + \zeta)^\mu}, \text{ read } \Gamma(2\mu + 1)(z + \zeta)^{1/2}.$$

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