Errata and Comments to *Higher Transcendental Functions* and *Tables of Integral Transforms*

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These are comments and possibly not yet published errata to the volumes


**Higher transcendental functions, Vol. 1**

2.8(54): On the left replace $3a + 5/6$ (the third argument of $F$) by $2a + 5/6$.

See the correct formula in [http://dlmf.nist.gov/15.4#iii](http://dlmf.nist.gov/15.4#iii), formula (15.4.32). For the proof and an observation of the error in Higher Transcendental Functions click there on the information on the right of the subsection header.

2.10 (1)–(4): The side condition for 2.10(1) and 2.10(4) should be: $|\arg z| < \pi$, $|\arg(1 - z)| < \pi$.

The side condition for 2.10(2) and 2.10(3) should be $|\arg(-z)| < \pi$.

2.11(29): Read $z^2(2 - z)^{-2}$ instead of $z^2/(2 - z)^{-2}$ (already in errata list in the volume).

2.12(6): The side condition on the parameters should be $Re c > Re b > 0$.

3.2(36), Remarks: Instead of 2.11(17) better use 2.11(29) (after correction of that formula).

3.4(8): On the right, after the equality sign, replace $i\pi$ by $-i\pi$ (observed by E. Diekema; see Ch. IV, (99) in L. Robin, *Fonctions sphériques de Legendre et fonctions sphéroidales, Tome II*, Gauthier-Villars, 1958).

after 3.5(3): For the convergence of both series require additionally that $Re \mu < \frac{1}{2}$.

3.15(4): This formula is valid for $z \in \mathbb{C}\setminus(-\infty,1]$. For $z \in (-1,1)$ the formula remains valid if we replace $(z^2 - 1)^{1/2} - \frac{1}{2} \nu$ by $(1 - z^2)^{1/2} - \frac{1}{2} \nu$ and $P_{\nu}^{1/2 - \nu} \frac{1}{n + \nu - \frac{1}{2}}$ by $P_{n + \nu - \frac{1}{2}}^{1/2 - \nu}$:

$$C_n^\nu(x) = 2^{\nu - \frac{1}{2}} \frac{\Gamma(n + 2\nu) \Gamma(\nu + \frac{1}{2})}{\Gamma(2\nu) \Gamma(n + 1)} (1 - x^2)^{1/2 - \nu} P_{n + \nu - \frac{1}{2}}^{1/2 - \nu}(x) \quad (x \in (-1,1)).$$

5.8(3): In the integrand the exponent of $(1 - u - v)$ should be $\gamma - \beta - \beta' - 1$.  

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Although the formula is given correctly in http://dlmf.nist.gov/16.15.E3, DLMF curiously refers there to Erdélyi et al. (1953a, §5.8) without observing the error in 5.8(3).

5.11(10): On the right the factor \((1 - y)^{-\mu}\) should be replaced by \((-y)^{-\mu}\).

6.15(15): The first factor \(\Gamma(-a)\) in the integrand should be \(\Gamma(a)\).

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10.9(6): The limit should be for \(\lambda \to 0\) insted of \(\lambda \to \infty\), and the equalities hold for \(n = 1, 2, \ldots\).

Two lines below this formula sec. 10.10 should be sec. 10.11.

10.9(8): In the formula for \(K_n\) insert a factor \(n!\) on the right.

10.10(5): In the formula for \(C_n\) delete the minus sign on the right.

10.11(16): But for \(n = 0\) and \(z_m = T_m\) we have \(z_1(x) = xz_0(x)\).

10.12(2): The formula for \(r_n\) should read: \(r_n = -n(n + \alpha)\).

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1.10(5): On the left replace the expression for \(f(x) (0 < x < 1)\) by
\[(1 - x)^\nu(x + 1)^\mu P_{2n}^{(\nu,\mu)}(x) + (1 + x)^\nu(1 - x)^\mu P_{2n}^{(\mu,\nu)}(x)\).

1.10(6): On the left replace the expression for \(f(x) (0 < x < 1)\) by
\[(1 - x)^\nu(x + 1)^\mu P_{2n+1}^{(\nu,\mu)}(x) - (1 + x)^\nu(1 - x)^\mu P_{2n+1}^{(\mu,\nu)}(x)\).

On the right replace \((-1)^{n+1}\) by \((-1)^n\).

2.10(6): On the left replace the expression for \(f(x) (0 < x < 1)\) by
\[(1 - x)^\nu(x + 1)^\mu P_{2n}^{(\nu,\mu)}(x) - (1 + x)^\nu(1 - x)^\mu P_{2n}^{(\alpha,\nu)}(x)\).

2.10(7): On the left replace the expression for \(f(x) (0 < x < 1)\) by
\[(1 - x)^\nu(x + 1)^\mu P_{2n+1}^{(\nu,\mu)}(x) + (1 + x)^\nu(1 - x)^\mu P_{2n+1}^{(\mu,\nu)}(x)\).

On the right replace \((-1)^{n+1}\) by \((-1)^n\).

3.3(4): On the left replace \(P_n^{(\nu,\mu)}\) by \(P_n^{(\nu,\mu)}\).
This formula implies 1.10(5), 1.10(6), 2.10(6) and 2.10(7).

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20.2(6): On the right replace \((1 - z)^\sigma\) by \((1 - z)^{-\sigma}\).
This formula is correctly reproduced in Gradshteyn & Ryzhik, sixth ed., (7.512.9).