Errata and comments for the book *Special functions* by G. E. Andrews, R. Askey and R. Roy

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Thanks to Michael Schlosser for many contributions. Thanks also to Gaurav Bhatnagar and Dani Rozenbroek.

last modified: August 10, 2022

These are errata and comments for the (very slightly corrected) 2000 softcover version of the book

G. E. Andrews, R. Askey and R. Roy, *Special Functions*, Cambridge University Press, 1999, ISBN 0-521-62321-9.

p.ix, 7.4: Replace "Bieberback" by "Bieberbach".

p.39, fourth line from below: Replace $x(1-x)$ by $x(1-x)^{-1}$.

p.40: It is confusing to write $\chi\eta \neq e$ in line 4 and write $\chi\eta \neq id$ in line 8.

p.53, Exercise 34: Replace $a^{p-1/2}$ by $a^{(p-1)/2}$.

p.53, Exercise 36(a): Replace $(-\frac{1}{p})$ by (the Legendre symbol) $(\frac{-1}{p})$.

p.94, Section 2.5:
Better call this Section "Contiguous relations and Jacobi polynomials".

p.99, (2.5.13): Replace $\frac{d^n}{dx^n}$ by $\frac{d^n}{dy^n}$.

p.99, Remark 2.5.1: (5.13) $\to$ (2.5.13)

p.101, three lines below (2.5.17): $T_x(x) \to T_n(x)$

p.108, 7th line: Replace $(k-m+n)$ by $(k+m-n)$.

p.110, Proof of Theorem 2.8.1: In the formula on the second line of the proof insert a minus sign at the beginning of the right-hand side.

p.111, fourth line from below: Replace $\int_a^{t_{n-1}}$ by $\int_a^{t_{n-2}}$.

p.115, Exercise 4(a): $\frac{1}{2}((1+x)^n + (1-x)^n) \to \frac{1}{2}((1+x)^{n+1} + (1-x)^{n+1})$

p.121, Exercise 39(b): On the third line replace $+\frac{x(1-y)}{y(1-x)}\Big]$ by $+\operatorname{Li}_2\Big[\frac{x(1-y)}{y(1-x)}\Big]$.
Also replace on that line $\log 2y$ by $\log^2 y$.

p.145, Corollary 3.4.3: This is also a terminating case of (2.2.10).

p.146, Proof of Theorem 3.4.4, l.7: The numerator should have additional factors $(-1)^r(a-b-c+1)_r$.

p.156, l.2: Replace "Theorem 3.3.1" by "Theorem 3.3.3".

p.169, 6th line from below: Replace $\frac{ab(1-n)}{c(2-n+a+b-c)}$ by $\frac{ab(-n)}{c(1-n+a+b-c)}$.

p.169, 5th line from below: Replace $\frac{(2-n)ab}{c(3-n+a+b-c)}$ by $\frac{(1-n)ab}{c(2-n+a+b-c)}$.

p.177, Exercise 3(b): The Gamma quotient on the right-hand side should be

$$\frac{\Gamma(a+\frac{3}{4})\Gamma(1/2)}{\Gamma((2a+3)/4)\Gamma((a+1)/2)}$$

p.201, line after (4.5.9): Replace $x = 1/2$ by $a = 1/2$, and replace $\alpha^2 = 1/a$ by $\alpha = 1/3$.

p.253, Theorem 5.4.1: Even better, the Theorem holds with on l.3 $[a, b]$ being replaced by (a, b). Then also make this replacement on l.1 of the Proof.

p.300, Remark 6.4.1: Write that the expression with the n-th derivative is equal to $P_n^{(\alpha,\beta)}(x)$ and observe that this is the Rodrigues formula (2.5.13´) for Jacobi polynomials.

p.306, (6.4.26): Replace x/λ by $x/\lambda^{\frac{1}{2}}$.

p.344, Exercise 27: Refer for the Rodrigues formula to (2.5.13´).

p.362, (7.1.14): The ratio of shifted factorials $\frac{(\beta+1)_n}{(\alpha+\beta+2)_n}$ right after the equation mark should be deleted.

p.484, third line after (10.0.8):
Replace $y(xy) = (yx)y = q(xy)y$ by $(xy)x = x(yx) = qx(xy)$.

p.495, Proof of Theorem 3.3.3: This is essentially the proof given in Appendix B of Koornwinder [1990].

p.500, (10.4.8) and p.501, l.6: In the denominator after the product sign replace $(1-q)^{2n+1}$ by $(1-q)^{2n-1}$.

p.527, (10.11.1): In the first line replace $(\beta; q)_n$ by $(\beta; q)_k$.

p.589, line 7: This math equation should be labelled by equation number (12.3.8). Reference to (12.3.8) is later made on p.591, Exercise 6.

p.627, Exercise 2, l.3: $\frac{B_j}{j} \to \frac{B_j}{j!}$

p.646, reference to Gegenbauer: Replace 1875 by 1874.

p.660: Add the subject index item:
Legendre symbol, 53

p.663: Insert after $(a; q)_n$ the symbol index item:
$(\frac{a}{p})$, 53