ERRATA TO "REAL ANALYSIS," 2nd edition

(6th and later printings)

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Additional corrections will be gratefully received at `folland@math.washington.edu` .

Page 7, line 12: $Y \cup \{y_0\} \quad \to \quad B \cup \{y_0\}$

Page 7, line -12: $X \in \quad \to \quad x \in$

Page 8, next-to-last line of proof of Proposition 0.10: $E \quad \to \quad X$

Page 12, line 17: $a \in \mathbb{R} \quad \to \quad x \in \mathbb{R}$ (two places)

Page 14, line 16: $x \in X \quad \to \quad x \in X_1$

Page 14, line 17: whenver $\to$ whenever

Page 22, line 2: susbset $\to$ subset

Page 24, Exercise 1, line 1: A family $\to$ A nonempty family

Page 24, Exercise 3a: disjoint $\to$ disjoint nonempty

Page 34, line 1: $\bigcup_1^n J_j \quad \to \quad \bigcup_1^m J_j$

Page 35, line -3: open h-intervals $\to$ open intervals

Page 37, line -1: countable $\to$ countable set.

Page 38, line -4: $\sum_0^\infty \quad \to \quad \sum_1^\infty$

Page 40, line 2 of §1.6: 2.7 $\to$ 2.8

Page 45, line 5: $[\infty, \infty] \quad \to \quad [-\infty, \infty]$

Page 45, line 8: 2.3 $\to$ 1.2

Page 47, Figure 2.1: The graph of ϕ_1 should have an extra "step" where the ordinate goes from 1 to $\frac{3}{2}$ and then from $\frac{3}{2}$ to 2, rather than directly from 1 to 2.

Page 49, line -8: inegrals $\to$ integrals

Page 56, last line of proof of Theorem 2.27: $(x,t) \quad \to \quad (x,t_0)$

Page 60, Exercise 27c: $\log(b/a) \quad \to \quad \log(a/b)$

Page 60, Exercise 31e: $s^2 \quad \to \quad a^2$

Page 61, line 9: repectively $\to$ respectively

Page 66, line -4: $\bigcap_1^\infty E_n \quad \to \quad E = \bigcap_1^\infty E_n$

Page 67, next-to-last line of Theorem 2.37: $\int f^y \, d\nu \quad \to \quad \int f^y \, d\mu$.

Page 69, Exercise 49a: $\mathcal{M} \times \mathcal{N} \quad \to \quad \mathcal{M} \otimes \mathcal{N}$

Page 69, Exercise 50: Either assume $f < \infty$ everywhere or use the condition $y < f(x)$ to define G_f. Also, $\mathcal{M} \times \mathcal{B}_{\mathbb{R}} \quad \to \quad \mathcal{M} \otimes \mathcal{B}_{\mathbb{R}}$.

Page 70, proof of Theorem 2.40, line 2: rectangles $\to$ rectangles, which may be assumed bounded, Page 72, line 5: definitons → definitions

Page 75, line 9: $\sum_j (x_j - a_j)(\partial g/\partial x_j)(y)$ → $\sum_k (x_k - a_k)(\partial g_j/\partial x_k)(y)$

Page 75, line 9: joning → joining

Page 76, line 6: $\bigcup_1^\infty U_j$ → $\bigcap_1^\infty U_j$

Page 76, line −7: $f \circ G$ → $f \circ G|\det DG|$

Page 76, line −5: $G(\Omega))$ → $G(\Omega)$

Page 87, line 3: $\nu(A_j) > \sum$ → $\nu(A_j) \geq \sum$

Page 88, Exercise 6: $\int f\,d\mu$ → $\int_E f\,d\mu$

Page 90, line −6: f → f_j

Page 102: (3.24) should be interpreted as "$T_F(b) = T_F(a) + \sup\{\ldots\}$" in the case $T_F(b) = T_F(a) = \infty$.

Page 104, line 7 of proof of Lemma 3.28: $x_0 < \cdots$ → $x = x_0 < \cdots$

Page 104, line −12: $\sum_1^n$ → $\sum_1^m$

Page 105, line 5 of proof of Proposition 3.32: $\mu(U_j) < \delta$ → $m(U_j) < \delta$

Page 105, proof of Proposition 3.32: The displayed inequalities are valid provided F is monotone, which may be assumed without loss of generality.

Page 106, line 4: greatest integer less than $\delta^{-1}(b-a)+1$ → smallest integer greater than $\delta^{-1}(b-a)$

Page 107, Exercise 28b: $\mu_{T_F(E)}$ → $\mu_{T_F}(E)$

Page 115, line −12: Propostiion → Proposition

Page 144, line 12: an LCH → a noncompact LCH

Page 145, paragraph after the end-of-proof sign, line 3: locally compact → locally compact and noncompact

Page 146, Exercise 73c: contains $\mathcal{F}$ → contains $\mathcal{F}$ and the constant functions

Page 146, Exercise 73d: Insert "(up to homeomorphisms)" after "of X".

Page 159, next-to-last line of proof of Theorem 5.8: Moroever → Moreover

Page 165, line 6: $x \in X$ → $x \in \mathcal{X}$

Page 166, line −2 of proof of Theorem 5.14: $(1-t)x + (1-t)z$ → $(1-t)x - (1-t)z$

Page 166, line −1: $U_{x\alpha_j\epsilon_j}$ → $U_{0\alpha_j\epsilon_j}$

Page 167, line 3: $p_{\alpha_j}(y) < \epsilon$ → $p_{\alpha_j}(y) \leq \epsilon$

Page 167, bulleted item at bottom (continuing to next page): $\mathbb{C}^X$ should be replaced by the space of locally bounded functions on X, i.e., the space of all complex-valued functions f on X such that $p_K(f) < \infty$ for all K.

Page 174, line 2: paralellogram → parallelogram

Page 174, lines −8 and −4: $\mathcal{X}$ → $\mathcal{H}$

Page 177, line 1: e_α → u_α and $\mathcal{X}$ → $\mathcal{H}$

Page 179, next-to-last line of notes for §5.1: coincides with → extends

Page 194, line −3, "simple consequence": Actually, all the y-sections of the set $\{(x, y) : |f(x, y)| > \|f(\cdot, y)\|_\infty\}$ have μ-measure 0, and you need Tonelli to deduce that μ-almost all the x-sections have ν-measure 0.

Page 197, line −2: on $(0, \infty)$, $\to$ on $[0, \infty)$ such that $\phi(0) = 0$,

Page 208, Exercise 41: For the case $p = \infty$, assume μ semifinite.

Page 208, Exercise 45, lines 3 and 4: T is weak type $(1, n\alpha^{-1})$ and strong type (p, r) where $1 < p < n(n - \alpha)^{-1}$ and $r^{-1} = p^{-1} - (n - \alpha)n^{-1}$.

Page 210, final sentence: Theorem 6.36 was discovered independently, a little earlier than [51], by D. R. Adams (A trace inequality for generalized potentials, *Studia Math.* **48** (1973), 99–105).

Page 217, lines 7 and 8: $f \quad \to \quad f_1$

Page 218, line −5: $\chi_u \quad \to \quad \chi_U$

Page 224, line 8: Insert minus signs before the two middle integrals.

Page 224, line −4 of proof of Proposition 7.19: $(-\infty, N] \quad \to \quad (-\infty, -N]$

Page 224, Exercise 18, line 1: $\mathcal{M}(X) \quad \to \quad M(X)$

Page 225, Exercise 24b: $\int f\, d\mu \quad \to \quad 0$

Page 225, Exercise 24c: $F(x) \quad \to \quad 0$

Page 226, line 2 of Proposition 7.21: $X \otimes Y \quad \to \quad X \times Y$

Page 229, line −10: $\mathcal{B}_X \times \mathcal{B}_Y \quad \to \quad \mathcal{B}_X \otimes \mathcal{B}_Y$

Page 242, line 12: $\|g\|_{(N+n+1,\alpha)} \quad \to \quad \|g\|_{(N+n+1,0)}$

Page 246, Exercise 9: Assume $p < \infty$.

Page 247, line 2 of Theorem 8.19: $\mathbf{T}^n \quad \to \quad \mathbb{Z}^n$

Page 250, line −2: $\sum_{|\gamma| \le |\beta|} \|f\|_{(N+n+1,\gamma)} \quad \to \quad \sum_{|\gamma| \le N} \|f\|_{(|\beta|+n+1,\gamma)}$

Page 251, line 4: $-2\pi a e^{-\pi a x^2} \quad \to \quad -2\pi a x e^{-\pi a x^2}$

Page 254, line 5: $\mathbb{Z}^N \quad \to \quad \mathbb{Z}^n$

Page 254, line 4 of proof of Theorem 8.32: 8.35 $\to$ 8.31

Page 255, Exercise 16a: $\|f\|_u \quad \to \quad \|f_k\|_u$

Page 256, line 1: right $\to$ left

Page 259, line 9: $f_2 * \phi_t(\xi) \quad \to \quad f_2 * \phi_t(x)$

Page 259, line 3 of proof of Theorem 8.36: The sum on the right should be $\sum_{\kappa \in \mathbb{Z}^n}$.

Page 261, line 7: $e^{-2\pi i \kappa x} \quad \to \quad e^{2\pi i \kappa x}$

Page 264, line 4: $e^{2\pi(2m+1)x} \quad \to \quad e^{2\pi i(2m+1)x}$

Page 268, formula (8.46): $\frac{1}{2} - x - [x] \quad \to \quad \frac{1}{2} - x + [x]$

Page 269, line 6: $S_m(a_j) \quad \to \quad S_m f(a_j)$

Page 272, Exercise 39: On line 2, positive $\to$ nonnegative. Also, replace line 3 by the following: at $\frac{\alpha}{m}, \frac{\alpha+1}{m}, \frac{\alpha+m-1}{m}$ for some $\alpha \in [0, 1)$ and $m \in \mathbb{N}$, in which case $\widehat{\mu}(jm) = e^{-2\pi i j\alpha}$ for all $j \in \mathbb{Z}$.

Page 273, line 7: if for all $\to$ for all
Page 274, line −1: $(t^2 + |x|^2)^{-(n+1)/2} \to (t^2 + |x|^2)^{(n+1)/2}$
Page 276, Exercise 43: $e^{-|x|/2} \to \frac{1}{2}e^{-|x|}$
Page 286, line 3: $\phi(y) \to \phi(x)$
Page 286, lines −13 and −5, and page 287, lines 1 and 3: $U \to V$
Page 288, line −10: $\psi(\epsilon x) \to \psi(x/\epsilon)$
Page 289, Exercise 7, line 2: f agrees $\to$ there exists a constant c such that $f + c$ agrees
Page 291, Exercise 13: $f * \psi_t \to F * \psi_t$
Page 293, line −2: $(1 + |x|)^N \to (1 + |x|)^{-N}$
Page 293, line −1: $\|\phi\|_{(0,N)} \to \|\phi\|_{(N,0)}$
Page 294, line 3: by (ii) $\to$ by the preceding example
Page 296, line −9: $x_j \to \xi_j$
Page 297, line 7: One $\to$ On
Page 297, proof of Proposition 9.14, line 3: $f = \widehat{g} \to f = g^\vee$
Page 297, line −3: $\widehat{f}(\kappa) \to \widehat{F}(\kappa)$
Page 300, Exercise 28, line 2: $|\xi|^{\alpha-2} \to |x|^{\alpha-2}$
Page 303, lines 5–6: Fourier transform is $\widehat{g}(\xi)$ $\to$ inverse Fourier transform is $g^\vee(\xi)$
Page 303, line 7: $(1 + |\xi|^2)^s \to (1 + |\xi|^2)^{-s}$
Page 309, Exercise 34c: $\Lambda_a \to \Lambda_\alpha$. Also, apologies for the two conflicting uses of the letter α; one might prefer to replace ∂^α and $|\alpha|$ by ∂^β and $|\beta|$.
Page 320, line −1: the the $\to$ the
Page 325, Exercise 17, line 2: smaple $\to$ sample
Page 325, Exercise 17, line 9: $X_j - M_j \to X_j - M_n$
Page 325, line 3 of §10.3: $e^{(t-\mu)^2/2\sigma^2} \to e^{-(t-\mu)^2/2\sigma^2}$
Page 326, line −6: $X_n \to X_j$
Page 331, line −7: $\exp(\cdots) \to \exp(-\cdots)$
Page 332, formula (10.23): $\exp(\cdots) \to \exp(-\cdots)$
Page 341, proof of Proposition 11.3, line 3: it $\to$ if
Page 344, proof of Theorem 11.9, end of line 2: Delete “$h \in C_c^+$ and”.
Page 349, line 3: $\mu^*(A) \cup \mu^*(B) \to \mu^*(A) + \mu^*(B)$
Page 349, line −11: $B^{2k-3} \to B_{2k-3}$
Page 358, line 10: $C_(X) \to C(X)$
Page 358, line −7: $x_{i_1 \cdots x_k} \to x_{i_1 \cdots i_k}$
Page 373, reference 131: of $\to$ in
Page 373, reference 139: *in* $\to$ *on*
Page 378, line −2: $CS' \to \mathcal{S}'$