

Errata to
A COURSE IN ABSTRACT HARMONIC ANALYSIS
(1st edition, 1995)

G. B. Folland

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

Page 2, 2nd line of Example 3: $\sum_{\infty}^{\infty} \rightarrow \sum_{-\infty}^{\infty}$

Page 9, line 17: $f_x^{-1}(y) \rightarrow f_x(y)$

Page 10, line 3: $h(\delta^1) \rightarrow h_{\theta}(\delta^1)$

Page 11, proof of Lemma 1.21, line 3: $\leq C \rightarrow < C$

Page 12, Proposition 1.24b: Assume the involution on \mathcal{B} is an isometry.

Page 18, line 10: $\int \langle T_f u, u \rangle \rightarrow \langle T_f u, u \rangle$

Page 18, line -1: $\int \langle T_f T_g u, v \rangle \rightarrow \langle T_f T_g u, v \rangle$

Page 19, line -3: (1.36c) \rightarrow (1.36b)

Page 21, line 7: simple \rightarrow of simple

Page 21, line 4 of proof of Theorem 1.43: $c_k \rightarrow c_j$

Page 22, proof of Theorem (1.44), line 6: (1.35) \rightarrow (1.36)

Page 23, second paragraph of proof of Spectral Theorem II: Let $\mathcal{A}_i = \{T | \mathcal{H}_i : T \in \mathcal{A}\}$. Σ_i should really be $\sigma(\mathcal{A}_i)$. However, the natural surjection $\mathcal{A} \rightarrow \mathcal{A}_i$ gives a natural continuous injection $\sigma(\mathcal{A}_i) \rightarrow \sigma(\mathcal{A})$, so $\sigma(\mathcal{A}_i)$ can be identified with a subset of Σ .

Page 24, line 4: $T_{f_n} v = T_f v \rightarrow T_{f_n} v - T_f v$

Page 24, line 9: (1.15c) \rightarrow (1.15)

Page 25, line -13: *-homeomorphism \rightarrow *-homomorphisms

Page 27, 5th line after Theorem 1.53: is no \rightarrow is no nonzero

Page 32, proof of Proposition 2.1(b): continuity \rightarrow Continuity

Page 33, line 1: $G \times H \rightarrow G/H$; also delete “by”.

Page 34, 3rd line after the proof of Proposition 2.6: Delete the second “of the group”.

Page 35, line -4: $x - y \rightarrow x - z$

Page 36, line 4: $\bar{p}\mathbf{Z}_p \rightarrow p\mathbf{Z}_p$

Page 39, line -7: $\int h d\lambda \int f d\mu \rightarrow \int h d\mu \int f d\lambda$

Page 42, line 16: neither continuous nor \rightarrow not

Page 45, proof of Proposition (2.23), line 5: $\phi(x) \rightarrow f(x)$

Page 48, line -12: symmetric \rightarrow compact symmetric

Page 51, first two lines after (2.36): The substitutions should be $y \rightarrow xy$ and $y \rightarrow y^{-1}$.

Page 53, proof of Proposition 2.41, line 2: $(\text{supp } g)V \rightarrow (\text{supp } g)V^{-1}$

Page 55, proof of Prop. (2.44), line 8, “Exercise 5.32”: In the second edition of [39], this is Exercise 5.28.

Page 56, line 7: $dh \rightarrow d\xi$

Page 62, first line after proof of Thm. 2.59: quasi-invariant \rightarrow strongly quasi-invariant. (All quasi-invariant measures on G/H are equivalent, but Theorem 2.59 doesn’t prove it. See Bourbaki [15].)

Page 62, lines –10 and –9: $\mathcal{F} \rightarrow \Phi$

Page 65, line 3: is then is \rightarrow is then

Page 68, line –11: $\pi \rightarrow \tilde{\pi}$

Page 78, line 6: $\phi(y^{-1}z) \rightarrow \phi(z^{-1}y)$

Page 78, line 7: $\phi((xy)^{-1}(xz)) \rightarrow \phi((xz)^{-1}(xy))$

Page 78, lines 12, 15, and 16: $\mathcal{H}_\pi \rightarrow \mathcal{H}_\phi$

Page 79, line 1: $\tilde{f}g \rightarrow \tilde{f}$

Page 80, line 7: $j = 1, 2 \rightarrow j = 0, 1$

Page 80, proof of Theorem (3.25), line 6: $\phi(0) \rightarrow \phi(1)$

Page 80, line –5: $\langle T(L_x f)^\sim, g \rangle_\phi \rightarrow \langle T(L_x f)^\sim, \tilde{g} \rangle_\phi$

Page 81, proof of Theorem 3.27, line 2: $\phi \rightarrow \phi_0$

Page 81, proof of Theorem 3.27, lines 5–7: $\phi_\alpha(0) \rightarrow \phi_\alpha(1)$ (several places)

Page 83, line –5: it includes \rightarrow its linear span includes

Page 88, line –9: For this calculation we need to know that $\phi(x) = \Phi(L_x L_y f) / \Phi(L_y f)$. This is OK provided that $\Phi(L_y f) \neq 0$, by the preceding argument. In fact, $|\Phi(L_y f)|$ is independent of y . To see this, let $\{\psi_U\}$ be an approximate identity. Then $\Phi(L_y f) = \lim \Phi(L_y f * \psi_U) = \lim \Phi(f * L_y \psi_U) = \lim \Phi(f) \Phi(L_y \psi_U)$, and $|\Phi(L_y \psi_U)| \leq \|\psi_U\|_1 = 1$, so $|\Phi(L_y f)| \leq |\Phi(f)|$ for all y and f ; but then $|\Phi(f)| = |\Phi(L_{y^{-1}} L_y f)| \leq |\Phi(L_y f)|$ too.

Page 94, display (4.15): $L_\eta f(\xi) \rightarrow L_\eta \hat{f}(\xi)$

Page 96, 4th display: $M(G) \rightarrow M(\hat{G})$

Page 104, proof of Theorem 4.39, line 5: (2.45) \rightarrow (2.46)

Page 130, 2nd paragraph, line 1: (5.5) \rightarrow (5.6)

Page 131, line 3: $\pi_{jk}(x) \rightarrow \pi_{kj}(x)$

Page 138, Theorem 5.26, line 2: $d_\pi \rightarrow d_\pi^{-1}$

Page 138, first display: The d_π^2 should be deleted, and the two instances of d_π^3 should each be d_π .

Page 140, first display: k ’s should be m ’s, and c_1 should be c_0 .

Page 143: The displayed formula on lines 2–3 should be labeled “(5.38)”.

Page 147, Theorem 5.44, line 3: $e^{i\theta} \rightarrow e^{in\theta}$

Page 152, line –4: $f(x) \rightarrow f_\alpha(x)$

Page 155, lines -7 and -6: $\mathcal{F}_0 \rightarrow \mathcal{F}^0$

Page 162, line 21: $SO(2) \rightarrow SO(3)$

Page 164, line 3 of (6.12): $f^*(z^{-1}) \rightarrow f^*(z)$

Page 180, lines -7, -5, and -3: $D_G \rightarrow \Delta_G$

Page 186, line 11: 6.44 \rightarrow 1.44

Page 187, line -2: $x^{-1}xh \rightarrow xhx^{-1}$

Page 192, second display: $T_{st}\beta$ should be moved from end of first line to beginning of second line.

Page 205, line 14: $\mathcal{H}^\infty \rightarrow \mathcal{H}_\infty$

Page 211, line 8: composition with \rightarrow composition of

Page 212, line -2: Line should begin with “*Proof:*”.

Page 214, line 11: $\phi_\alpha \otimes g_\beta \rightarrow f_\alpha \otimes g_\beta$

Page 222, line -6: $\mathcal{A} \rightarrow A$

Page 223, line 6: $\int_\oplus \rightarrow \int^\oplus$

Page 232, line 4: $UC(\pi)U^{-1} \rightarrow$ the center of $UC(\pi)U^{-1}$.

Page 238, equation (7.49): $\Delta(x)^{-1/2} \rightarrow \Delta(x)^{1/2}$

Page 241, line -7: $s^{-1}e^s t \rightarrow s^{-1}(e^s - 1)t$

Page 243, line 4: $t \rightarrow s$ (2 places)

Page 243, line 5: Insert $\phi(t)$ after $s^{1/2}$.

Page 244, sentence after (7.53): For the representation δ_n^- , the factor $(-bz + d)^{-n}$ in (7.53) must be replaced by $(-b\bar{z} + d)^{-n}$.

Page 245, line -2: Insert “(except for a set of measure zero)” after “each coset”.

Page 247, line 8: Theorem 3.2 \rightarrow Theorem 2.3

Page 249, line 4: The description of Ω is incorrect. Each $x \neq e$ in G can be written uniquely as $\prod_1^n x_j$ ($n \geq 1$) where each x_j is either a , b , a^{-1} , or b^{-1} , and a and a^{-1} , or b and b^{-1} , never occur adjacent to one another in the product. The set $\{xb : x \in G\}$ in the definition of Ω should be replaced by the set of all x whose last factor x_n is b or b^{-1} .

Page 254, line -9: precisely \rightarrow precisely when

Page 255, proof of Proposition A.1.6: On line 4, sum \rightarrow average. On line 5, $S = \frac{1}{2}[f_+(S) + f_-(S)]$. On line 6, delete the $\frac{1}{2}$.

Page 256, last line before Appendix 2: $\sum_n^\infty \rightarrow \sum_{n+1}^\infty$ (two places)

Page 261, line -2: $\Delta(y)R_y f \rightarrow \Delta(y)^{1/p}R_y f$. The following sentence is correct only if either G is unimodular or $p = 1$ or g has compact support; cf. Proposition (2.39).

Page 262, line -9: 1 and 2 \rightarrow (A3.1) and (A3.3)

Page 262, line -8: 2 \rightarrow (A3.3)

Page 262, line -7: $\pi(x)v \rightarrow \pi(x)u$

Page 264, [17]: Brocker \rightarrow Bröcker

Pages 274–5: The page number for “measure, Radon” and “Radon measure” is vii, and the page number for “measure, regular” and “regular measure” is viii.

Page 275, “representation, equivalent”: 169 → 69