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: \( \sum_\infty \to \sum_{-\infty} \)
Page 9, line 17: \( f_x^{-1}(y) \to f_x(y) \)
Page 10, line 3: \( h(\delta^1) \to h\theta(\delta^1) \)
Page 11, proof of Lemma 1.21, line 3: \( \leq C \to < C \)
Page 12, Proposition 1.24b: Assume the involution on \( \mathcal{B} \) is an isometry.
Page 18, line 10: \( \int \langle T_f u, u \rangle \to \langle T_f u, u \rangle \)
Page 18, line -1: \( \int \langle T_f T_g u, v \rangle \to \langle T_f T_g u, v \rangle \)
Page 19, line -3: (1.36c) \( \to \) (1.36b)
Page 21, line 7: simple \( \to \) of simple
Page 21, line 4 of proof of Theorem 1.43: \( c_k \to c_j \)
Page 22, proof of Theorem (1.44), line 6: (1.35) \( \to \) (1.36)
Page 23, second paragraph of proof of Spectral Theorem II: Let \( \mathcal{A}_i = \{ T|H_i : T \in \mathcal{A} \} \). \( \Sigma_i \) should really be \( \sigma(\mathcal{A}_i) \). However, the natural surjection \( \mathcal{A} \to \mathcal{A}_i \) gives a natural continuous injection \( \sigma(\mathcal{A}_i) \to \sigma(\mathcal{A}) \), so \( \sigma(\mathcal{A}_i) \) can be identified with a subset of \( \Sigma \).
Page 24, line 4: \( T_{f_n} v = T_f v \to T_{f_n} v - T_f v \)
Page 24, line 9: (1.15c) \( \to \) (1.15)
Page 25, line -13: \( \ast \)-homeomorphism \( \to \ast \)-homomorphisms
Page 27, 5th line after Theorem 1.53: is no \( \to \) is no nonzero
Page 32, proof of Proposition 2.1(b): continuity \( \to \) Continuity
Page 33, line 1: \( G \times H \to G/H \); also delete “by”.
Page 34, 3rd line after the proof of Proposition 2.6: Delete the second “of the group”.
Page 35, line -4: \( x - y \to x - z \)
Page 36, line 4: \( \bar{p}\mathbb{Z}_p \to p\mathbb{Z}_p \)
Page 39, line -7: \( \int h \, d\lambda \int f \, d\mu \to \int h \, d\mu \int f \, d\lambda \)
Page 42, line 16: neither continuous nor \( \to \) not
Page 45, proof of Proposition (2.23), line 5: \( \phi(x) \to f(x) \)
Page 48, line -12: symmetric \( \to \) compact symmetric
Page 51, first two lines after (2.36): The substitutions should be \( y \to xy \) and \( y \to y^{-1} \).
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: \(F \rightarrow \Phi\)

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): \(L_n f(\xi) \rightarrow L_n \tilde{f}(\xi)\)

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 \(d_\pi^2\) should be deleted, and the two instances of \(d_\pi^0\) should each be \(d_\pi\).

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: \( F_0 \rightarrow F^0 \)
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: \( T_{si\beta} \) should be moved from end of first line to beginning of second line.
Page 205, line 14: \( H_\infty \rightarrow H_\infty \)
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: \( A \rightarrow A \)
Page 223, line 6: \( f_\otimes \rightarrow f^{\otimes} \)
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: \( s^{-1}e^{st} \rightarrow s^{-1}(e^{s} - 1)t \)
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 \( \delta_n^- \), 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 \( \Omega \) is incorrect. Each \( x \neq e \) in \( G \) can be written uniquely as \( \prod x_j \) \( (n \geq 1) \) 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 \( \Omega \) 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: \( \sum_n \rightarrow \sum_{n+1} \) (two places)
Page 261, line −2: \( \Delta(y)R_yf \rightarrow \Delta(y)^{1/p}R_yf \). 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