Misprints for the fourth edition of
“An Introduction to Analysis”

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New For Fall 2013

p. 3, line −8: Replace Z with \( n = 0, \pm 1, \pm 2, \ldots \)
p. 57, Exercise 2.3.2: Replace \( 0 \leq x_1 < 1 \) with \( 0 < x_1 < 1 \)
p. 89, line 2: Replace \( \varepsilon \) with \( \varepsilon \)
p. 150, Exercise 5.2.1d: Replace \( \sqrt{2x + x^2} \) with \( \sqrt{2x - x^2} \)
p. 108, Exercise 4.2.7a: Replace \( x^{q(m-2)}a \) with \( x^{2(m-2)}a^q \) and \( xa^{q(m-2)} \) with \( x^q a^{q(m-2)} \)
p. 158, line −13: Replace \( t \) and \( dt \) on the far right side with \( x \) and \( dx \)
p. 158, lines 6 and 7: Replace \( \subseteq \) with \( = \)
p. 324, line 7: Replace \( \subseteq \) with \( = \)
p. 366, Exercise 10.4.1c: Replace “for some” with “and”
p. 369, line 17: Replace “Examples 10.36 and 10.38 are both connected” with “Example 10.36 is connected and Example 10.38 is not connected”
p. 398, lines 8 and 10: replace \( f \) with \( f \) twice
p. 404, line 4: Replace \( D \) with \( D \) twice
p. 405, line −11: Replace \( (a + h, b + k), f(a + h, b + k) \) with \( (a + h, b + k, f(a + h, b + k)) \)
p. 413, line 9: Replace \( 0 \) with \( 0 \)
p. 413, line −10: Replace \( Df(b)(h) \) with \( Df(b)(\varepsilon(h)) \)
p. 413, line −5: Reverse \( k \to 0 \) with \( h \to 0 \)
p. 419, line 4: Replace \( f \) with \( f \) three times
p. 426, line −6: Replace “matrix of coefficients” with “the determinant of the matrix of coefficients”
p. 432, line 5: Replace \( 1 - 1 \) on \( \Omega_2 \) with \( 1 - 1 \) on \( \Omega_1 \)
p. 457, line 9: Replace \( j = 1 \) with \( k = 1 \)
p. 458, line 13: Replace Theorem 11.39 with Lemma 11.39
p. 529, line −1: Replace “smooth. The converse of this statement is false, even for arcs.” with “smooth, but even smooth arcs might have non-smooth parametrizations.”
p. 547, line −6: Replace \( (0, 0, 0) \) with \( 0 \)
p. 556, Figure 13.13: Reverse the points \( (\pi, -1) \) and \( (-\pi, 1) \)
p. 558, line −11: Insert \( d(s, t) \) at the end of the line
p. 560, line −4: Replace “inward” with “outward”
p. 569, line 8: Replace “the Gauss” with “Gauss”
p. 569, line −2: There are two missing right parentheses

Old Errata

(1) p. 3, line −15: Replace \( n \in \mathbb{N} \) with \( n = 1, 2, \ldots \)
(2) p. 7, line −7: insert comma, i.e., replace \( \cdots - 2 \) with \( \ldots, -2 \)
(3) p. 7, line −6: Replace \( \text{Zahlen} \) with \( \text{Zahl} \)
(4) p. 10, line -2: Replace “and commutativity” with “associativity, and commutativity”

(5) p. 13, line 11: Replace “Multiplying this inequality by −1, we conclude that” by “By the Second Multiplicative Property, this is equivalent to”

(6) p. 14, line 3: Replace “intervals” by “interval”

(7) p. 15, Exercise 1.2.7d: Replace 1.25 with 1.26

(8) p. 15, Exercise 1.2.9: Place an a) after 1.2.9. and erase “and Remark 1.1” In part b) add: Using Remark 1.1,

(9) p. 19, lines 18–20: Replace “If \( n = 1 \), then...Again,” by “If \( n = 1 \), then \( E \) is empty. When \( n = 2 \), \( k_0 = 1 \), and when \( n = 3 \), \( k_0 = 2 \). In both cases,”

(10) p. 20, line 2: Replace “a supremum” by “the supremum”

(11) p. 20, line −17: insert “and only if” between “if” and “it”

(12) p. 21, line −1: Add: , provided we use the convention that \( -\infty < \infty \).

(13) p. 22, line −10: delete the article “a” which precedes nonempty

(14) p. 23, lines −17 and −16: replace “the Principle of Mathematical Induction” by “called the Principle of Mathematical Induction, or the Axiom of Induction”

(15) p. 23, line −6: Replace Remark 1.1i by Remark 1.1ii

(16) p. 25, line 18: Replace “a supremum” by “the supremum”

(17) p. 32, lines −16 and −15: Replace \( \{1\} \) by \( \{0\} \) all three times

(18) p. 34, line −16: delete the “of” at the end of the line

(19) p. 34, line−9: replace \( f(\{0\}) \) with \( f(\{0\}) \)

(20) p. 35, line −17: delete the “in” which occurs between “used” and “several”

(21) p. 43, line 1: Replace “Remark 2.1” by “Example 2.2ii”

(22) p. 46, Exercise 2.1.7b: Replace \( \{ n \} \) by \( \{n\} \)

(23) p. 56, line 16: Replace \( 0 \leq k \) with \( 1 \leq k \)

(24) p. 57, Exercise 2.3.3’ Erase the “or” which appears before “as”

(25) p. 60, line −1: Replace \( y_n \) with \( y_n \)

(26) p. 64, the statement of Theorem 2.37: Replace “value” by “extended real number” twice and follow “converges” by or diverges.

(27) p. 66, line −2: Add a space between sup and \( x_k \)

(28) p. 73, line −4: Replace “a limit” by “limits”

(29) p. 74, Exercise 3.1.1: Replace “exist” with “exists”

(30) p. 78, line −6: Replace \( \infty \) with \( -\infty \), twice

(31) p. 80, line 7: Insert “finite” between “for” and “two-”

(32) p. 82, Exercise 3.2.3 a): Replace “Proof that” with “Using the convention that \( 0^0 = 1 \), prove that”

(33) p. 82, Exercise 3.2.5: Delete “\( a \in \mathbb{R} \) and” which precedes \( f : [a, \infty) \)

(34) p. 84, Definition 3.23: Delete “for every \( x \in A \)”

(35) p. 89, line 2: Add: , namely, does not satisfy (5) for any \( \varepsilon < 1 \)

(36) p. 91, Exercise 3.3.6: Replace “nowhere continuous” with “nowhere-continuous”

(37) p. 104, line 2: End it with a period

(38) p. 104, Exercise 4.1.0d: Replace \( [a, b] \) with \( (a, b] \)

(39) p. 104, Exercise 4.1.1b: Replace \( a \neq 0 \) with \( a > 0 \)

(40) p. 107, line 1: insert “twice” in front of “differentiable” two times
(41) p. 108, Exercise 4.2.7a: End the sentence with a period.
(42) p. 111, line −19: Replace “Remark 14.33” with “Remark 14.32”
(43) p. 112, line 11: Insert “the proof of” between “by” and “part i)”
(44) p. 112, line −10: Replace the first two sentences of the proof by: By symmetry, it suffices to prove part ii). Fix \( c \in (a, b) \).
(45) p. 112, line −2: Replace “i.e.,” with “in particular,”
(46) p. 113, line 13: Replace \( x \in \mathbb{R} \) with \( x \in (a, b) \)
(47) p. 113, line 17: Insert “by symmetry” between “there exist” and “\( x_1 < x_2 \)”
(48) p. 114, line 5: Replace \([-1, \infty)\) with \([0, \infty)\)
(49) p. 115, line 17: Replace “occurs” with “only occur”
(50) p. 118, equation number (17): Replace “\( \leq \)” with “\( = \)”
(51) p. 118, lines −4 and −3: Replace “denominator” with “fraction” and “in general” with “when the derivatives of \( f \) are bounded”
(52) p. 120, line −16: Insert “be distinct points” between “\( x_k \in I \)” and “with”
(53) p. 120, line −9: replace \( \geq \) by \( > \) and \( \leq \) by \( < \)
(54) p. 121, line 5: Replace \( t \) by \( y \)
(55) p. 122, line −10: Replace \( 0 \cdot \infty \) by \( 0 \cdot \infty = -0 \cdot (-\infty) \)
(56) p. 123, line 5: Insert after “In particular,” the phrase “the limit exists by l’Hôpital’s Rule and”
(57) p. 123, line 7: Replace \( x \to 1 \) by \( x \to 1^+ \)
(58) p. 123, line 11: Insert after “Therefore,” the phrase “the limit exists by l’Hôpital’s Rule and”
(59) p. 124, Exercise 4.4.5f: Replace \( (\log x) \) with \( |\log x| \)
(60) p. 126, lines 1 and 2: Replace “we may suppose that” with “since” and delete “hence”
(61) p. 127, lines 8 and 12: Replace Theorem 4.33 with Theorem 4.32, twice
(62) p. 130, lines 6, 7, p. 131, line 4, p. 132, line −5, and p. 157, line −9: Insert commas after \( \ldots \), e.g., replace \( \{x_0, x_1, \ldots, x_n\} \) by \( \{x_0, x_1, \ldots, x_n\} \)
(63) p. 145, line 4: Delete: (see Exercise 5.2.4)
(64) p. 148, line 12: Replace “\( \varepsilon/M \)” by “\( \varepsilon/M \), where \( x_0 + \delta < b \)”
(65) p. 148, lines −9, −10, and p. 149, lines 3, 10: Replace “an \( c \)” with “a \( c \)”
(66) p. 149, line −3 Insert “greater than or equal to” between “\( M \) is” and “the maximum value”
(67) p. 150, line −5: Replace \( a + b \neq 0 \) by \( a \geq 0 \)
(68) p. 156, lines −6 and −3: Replace \( t \) by \( x \), three times
(69) p. 156, line −3: Replace the \( x_j \) with \( t_j \)
(70) p. 157, line 2: Insert “of” between “sum” and “the”
(71) p. 157, line 3: Replace \( \tilde{P} \) with \( P \)
(72) p. 158, lines 6, 7: Replace \( P \) with \( \tilde{P} \)
(73) p. 158, line 10: Replace \( x \) with \( t \), twice
(74) p. 161, line 4: Replace \( \leq 20 \) with \( 12 \)
(75) p. 162, line −12: Insert “represent the inverse function of \( L \)” between “\( L^{-1} \)” and “.”
(76) p. 163, Exercise 5.3.11: Erase lines 8 and 9, and replace “prove that” with “prove
that $f^q$ is integrable on $[a, b]$

(77) p. 166, line 3: Replace $[c, b]$ with $[c, b)$
(78) p. 166, line -4, and p. 167, line 12: Replace “Theorem 5.43” with “Theorems 5.43 and 5.42”
(79) p. 167, line 7: Replace “absolute” with “absolutely”
(80) p. 167, line 13: Replace $[a, b]$ with $(a, b)$
(81) p. 168, line 2: Replace $= n$ with $\geq 2$
(82) p. 172, line 2: Replace $\geq n - 1$
(83) p. 172, lines -6 and -7: add “$\Phi(a) = 0$ and”, and replace $[a, x]$ with $(a, x)$
(84) p. 174, line -1 and -2: Replace $-1$ by 0, twice
(85) p. 179, line 3: Replace $\in$ by $\in$
(86) p. 179, line -11: Erase “both $D_L f(x)$ and”, and replace “are” with “is”
(87) p. 181, line -11: Erase “both $D_L f(x)$ and”, and replace “are” with “is”
(88) p. 247, Exercise 7.3.1b: Replace the exponent $2k$ by $k$
(89) p. 311, line -10: Replace $r(x)$ by $r(x) > 0$
(90) p. 311, line -10: Replace $r(x)$ by $r(x) > 0$
(91) p. 315, lines 3 and 4: Replace $U \{L\}$ with $U$, and “$M = \lim_{y \to L} h(y)$. Then” with “$h$ is continuous at $L$, then”
(92) p. 412, Exercise 11.3.11: Assume that $x, y,$ and $z$ are positive.
(93) p. 457, line 9: Replace “$j = 1$” by “$k = 1$”
(94) p. 470, line 1: Add: let $E_0 \subseteq E$

Note: The inequality on the penultimate line of the proof of Theorem 12.24 follows from the proof of Theorem 12.23ii.

(95) p. 422, line 4: Replace $\cos(xy)$ by $\sin(xy)$
(96) p. 484, line 8: Replace $\sum_{k=1}^p$ by $\sum_{Q_k \cap \partial H \neq \emptyset}$
(97) p. 524, line 9: Replace $J$ by $I$
(98) p. 562, line -10: Replace “hyperboloid of one sheet $x^2 + y^2 - z^2 = 1$” by “quartic hyperboloid of one sheet $x^2 + y^2 = (z^2 + 1)^2$”
(99) p. 562, line -3: Replace $x^2 + y^2 = 1 + u^2$ by $x^2 + y^2 = (1 + u^2)^2$
(100) p. 594, line 1: Replace “Remark 14.11” by “Definition 14.10”
(101) p. 606, line -3: Replace “integrable” by “piecewise continuous”
(102) p. 607, line 2: Replace $F$ by $-F$
(103) p. 607, line 3: Replace “Theorem 5.26” by “Theorems 5.26 and 5.28” and replace “continuous on $\mathbb{R}$” by “continuous on $\mathbb{R}$ and differentiable on $[-\pi, \pi] \setminus E$ for some finite set $E$”
(104) p. 620, line -18: Replace “identity” with “equation”
(105) p. 620, line -9: “to” should NOT be in italics
(106) p. 621, line 5: Replace “satisfies” with “satisfy”
(107) p. 622, line -20: Replace “Lemma A.8” by “Theorem A.8”, twice
(108) p. 622, lines -17 and -18: Replace “Lemma A.8” by “Lemma A.7”, twice
(109) p. 622, line -15: Replace $n - m$ with $n + m$
(110) p. 622, line -3: Insert “with $b > 0$ between “$< c$” and “there exist”
(111) p. 623, line 13: Replace “the square” with “a square”
(112) p. 624, line 5: Replace 1.11 with 1.23
(113) p. 628, line –2: Replace B.2ii with B.2iii
(114) p. 644, line –3: the right quote marks do not match the left quote marks
(115) p. 629, lines –11 through –8: Replace “notice that $h$ cuts...$b - a \cos \theta$.” with “cuts
$T$ into two right triangles whose common side $h = a \sin \theta$ and whose respective bases
are $a \cos \theta$ and $b - a \cos \theta$.”
(116) p. 648, Exercise 1.5.0a): Replace $y = \arcsin(\pi - x)$ with $y = \pi - \arcsin x$
(117) p. 650, line –10: Erase “is the only” and “in this section which”
(118) p. 651, line –19: Replace “the Sign Preserving Property” with “Lemma 3.28”
(119) p. 652, line 16: Replace “greatest” with “large”