

# Errata for A COURSE IN CALCULUS AND REAL ANALYSIS, 2ND ED.

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In the following, “line  $+i$ ” means the  $i$ th line from the top, whereas “line  $-i$ ” means the  $i$ th line from the bottom. The text to be changed appears in **red**, while the corrected version appears in **blue**. In addition, we acknowledge the name of the person who first pointed out a correction listed here, by mentioning it in **green** color (and hyperlinking it to that person’s web page, whenever possible) inside square brackets at the rightmost end of the line.

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- Page 27, Line  $-7$ :** Change **1 and 2** to **the first and the second bullet points** [[Marc Paoletta](#)]
- Page 49, Line  $+7$ :** Change  **$a_n$**  to  **$A_n$**  [[Marc Paoletta](#)]
- Page 51, Line  $+6$ :** Change  **$(1 - 2^{p-1})$**  to  **$(1 - 2^{1-p})$**  [[Marc Paoletta](#)]
- Page 53, Lines  $+2, +4$ :** Change **Suppse** to **Suppose** [[Marc Paoletta](#)]
- Page 53, Line  $-12$ :** Change **arithmeric** to **arithmetic** [[Marc Paoletta](#)]
- Page 59, Line  $-15$ :** Change  **$M_n \leq M_{n+1}$**  to  **$M_n \geq M_{n+1}$**  [[Marc Paoletta](#)]
- Page 61, Line  $+6$ :** Change **i contrast** to **in contrast** [[Marc Paoletta](#)]
- Page 66, Line  $-12$ :** Change **the the** to **the**
- Page 70, Line  $+6$ :** Change **Proposition 3.2** to **Proposition 3.3** [[Marc Paoletta](#)]
- Page 97, Line  $+3$ :** Change  **$f(x) \rightarrow \infty$**  to  **$f(x) \rightarrow -\infty$**  [[Kalpesh Haria](#)]
- Page 110, Line  $+12$ :** Change (in two places)  **$c$**  to **1** [[Marc Paoletta](#)]
- Page 111, Line  $+7$ :** Change  **$(|f_1(x)g(x)$**  to  **$(f_1(x)g(x)$**  [[Kalpesh Haria](#)]
- Page 113, Line  $+11$ :** Change  **$g$**  to  **$g$  is**
- Page 113, Line  $-15$ :** Change **Hence by** to **By**
- Page 121, Line  $-9$ :** Change  **$[0, \infty)$ , On** to  **$[0, \infty)$ . On** [[Marc Paoletta](#)]
- Page 122, Line  $+3$ :** Change **the** to **The**

- Page 179, Line -10: Change  $c$  to  $r$
- Page 193, Line +12: Change  $U(Q, h)$  to  $U(R, h)$  [Kalpesh Haria]
- Page 193, Line +12: Change  $L(Q, h)$  to  $L(R, h)$  [Kalpesh Haria]
- Page 194, Line +6: Change  $=$  to  $\leq$  [Marc Paoletta]
- Page 216, Line -1: Change  $\inf\{f(x) : x \in D\}$  to  $\inf D$  [Kalpesh Haria]
- Page 216, Line -1: Change  $\sup\{f(x) : x \in D\}$  to  $\sup D$  [Kalpesh Haria]
- Page 218, Line +2: Change **By** to **By multiplying both sides of this inequality by  $x_i - x_{i-1}$  and** [Marc Paoletta]
- Page 220, Line +7: Change **from  $J$**  to **from  $E$**  [Marc Paoletta]
- Page 220, Line +15: Change **contained** to **not contained** [Marc Paoletta]
- Page 220, Line +17: Change  $\sum''$  to  $\sum'$  [Marc Paoletta]
- Page 238, Line -2: Change **from  $(\exp)'x = x$**  to  **$(\exp)'x = \exp x$**  [Marc Paoletta]
- Page 252, Line +7: Change **from  $\sin(-x) = \sin x$**  to  **$\sin(-x) = -\sin x$**  [Marc Paoletta]
- Page 259, Line +1: Change **Figure 7.12** to the **Figure** hyperlinked here.
- Page 261, Line -2: Change **nonzero  $y$**  to **positive  $y$**  [Marc Paoletta]
- Page 262, Line +1: Change **Figure 7.13** to **Figure 7.13 (i)** and **Figure 7.13 (ii)** [These figures, hyperlinked here, depict the behaviour of  $f_1$  near 0 and away from 0.] [Marc Paoletta]
- Page 264, Line +1: Change **Figure 7.14** to **Figure 7.14 (i)** and **Figure 7.14 (ii)** [These figures, hyperlinked here, depict the behaviour of  $f_2$  near 0 and away from 0.] [Marc Paoletta]
- Page 298, Line -1: Insert: **Here  $\theta(0, 0) := 0$  and for  $(x, y) \in \mathbb{R}^2$  with  $(x, y) \neq (0, 0)$ , by  $\theta(x, y)$  we mean  $\theta$  given by the first displayed equation in Proposition 7.22.** [Marc Paoletta]
- Page 301, Line -16: Change  $p$  to  $p_2$  [Marc Paoletta]
- Page 375, Line +1: Change **for  $k \geq 2$**  to **for  $k \geq 3$**  [Kalpesh Haria]
- Page 376, Line +10: Change **Supose** to **Suppose** [Marc Paoletta]
- Page 377, Line -6: Change **Exercise 9.15** to **Proposition 9.15** [Marc Paoletta]
- Page 387, Line -5: Change **rhe** to **the** [Marc Paoletta]
- Page 388, Line -2: Change  $x^s$  to  $x^5$  [Marc Paoletta]
- Page 389, Line -2: Change  $f(0) = 1$  to  $f(0) = 0$  [Abhaya Chitre]
- Page 389, Line -2: Change  $x \in (0, 1)$  to  $x \in (0, 1]$  [Abhaya Chitre]
- Page 390, Line +10: Change  $k > r + 1$  to  $k \geq r + 1$  [Marc Paoletta]

- Page 392, Lines +2,+3,+4:** Change the entire sentence **We shall ... of  $f$ .** to **For any  $x \in [a, \infty)$ , we may refer to  $F(x) = \int_a^x f(t)dt$  as the **partial integral up to  $x$**  of the improper integral  $\int_{t \geq a} f(t)dt$ .**
- Page 393, Line -5:** Change **of partial** to **of its partial**
- Page 394, Line +9:** Change  **$F$  denote the partial integral function of  $f$**  to  **$F(x) := \int_a^x f(t)dt$  for  $x \in [a, \infty)$**
- Page 395, Line +1:** Change **“partial integral” of  $f$**  to **partial integral of  $\int_{t \geq a} f(t)dt$**
- Page 395, Line +8:** Change **the partial integral function of  $\int_{t \geq a} f(t)dt$**  to **defined by  $F(x) := \int_a^x f(t)dt$  for  $x \in [a, \infty)$**
- Page 395, Line -7:** Change **the partial integral function  $F : [1, \infty) \rightarrow \mathbb{R}$**  to  **$F : [1, \infty) \rightarrow \mathbb{R}$  defined by  $F(x) := \int_1^x f(t)dt$  for  $x \in [1, \infty)$ ,**
- Page 401, Line +5:** Change **the partial integral function of  $f$**  to **defined by  $F(x) := \int_a^x f(t)dt$  for  $x \in [a, \infty)$**
- Page 401, Line -8:** Change  $\int_a^x |f(t)|dt$  to  $\int_x^y |f(t)|dt$  [Marc Paolella]
- Page 402, Line -6:** Change **part (i)** to **part (ii)** [Marc Paolella]
- Page 404, Line -2:** Change  $\int_{t \geq a} f(t)dt$  to  $\int_{t \geq a} f(t)g(t)dt$  [Marc Paolella]
- Page 406, Lines +8,+9:** Change **by considering  $\phi : [b, a] \rightarrow \mathbb{R}$  given by  $\phi(t) := t$ , we see from Proposition 6.29** to **it is easy to see** [Mrinmoy Datta]
- Page 410, Line -7:** Change  **$x \geq a$**  to  **$x > a$**  [Marc Paolella]
- Page 412, Line -12:** Change **clear that** to **clear that the following inequalities hold if  $q \geq 1$ , whereas the reverse inequalities hold if  $q < 1$ :** [Marc Paolella]
- Page 420, Line +12:** Change **its partial integral** to **the function**
- Page 437, Line +9:** Change **not true** to **not true in the sense that a sequence  $(f_n)$  of continuously differentiable real-valued functions on  $[a, b]$  can converge uniformly to a continuously differentiable function  $f$ , but the sequence  $(f'_n)$  of its derivatives need not converge uniformly to  $f'$**  [Marc Paolella]
- Page 472, Line +3:** Change **a partial integral function** to **the partial integral function (up to  $x$ )**
- Page 479, Line +7,+8:** Omit **corresponding to  $f$ , namely of the function**
- Page 479, Line +10:** Change **carry** to **where  $x \in [a, \infty)$ , carry**
- Page 479, Line -11:** Change **corresponding to  $f$**  to **up to  $x$  of the improper integral  $\int_{t \geq a} f(t, \cdot)dt$**
- Page 481, Line +10:** Change **corresponding to  $f$**  to **up to  $x$  of the improper integral  $\int_{t \geq a} f(t, \cdot)dt$**

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**NOTE:** Please notify the authors at [sudhirghorpade@gmail.com](mailto:sudhirghorpade@gmail.com) or [balmohan.limaye@gmail.com](mailto:balmohan.limaye@gmail.com) if you notice any corrections not on the above list.

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