Corrections to the textbook
Updated January 2, 2017

- **Page 6, near the middle:** The definition of $[a, b)$ should be

$$[a, b) = \{x : a \le x < b\}.$$

- **Page 8, Example, first line:** 2^1 should be equal to 2, not 1.

- **Page 46, Problem 13:** The definition of g should be $g(x) = \sqrt{x} - 2/\sqrt{x}$.

- **Page 51, Exercises 1.8, Problem 9:** This is false for $n = 1$, so either n needs to be restricted to $n \ge 2$, or the inequality should be changed to "$\ge \sqrt{n}$."

- **Page 60, Figure 2.1.14:** The graph should show an open circle at $(0, 1)$, because $f(0)$ is not defined.

- **Page 74, Theorem 2.3.2:** The statement of part (iii) should read as follows:
  (iii) $\lim_{x \to c} [\alpha f(x)] = \alpha L$, $\qquad \alpha$ a real number.

- **Page 83, just below Figure 2.4.3:** The definition of the Dirichlet function should be

$$f(x) = \begin{cases} 1, & x \text{ rational,} \\ 0, & x \text{ irrational.} \end{cases}$$

- **Page 96, multiline display:** On the second line, $\tan^2 x - 1$ in the denominator should be $\tan^2 x$.

- **Page 105, Figure 3.1.1:** The caption on the right-hand side should be $h < 0$, not $h > 0$.

- **Page 117, 5th line of the proof:** In the second set of brackets, change $f(x - h)$ to $f(x + h)$.

- **Page 129, problem 61:** The problem should say that n is a positive integer.

- **Page 141, 4th displayed equation:** The arrow should point to the second equal sign, not the first.

- **Page 146, problem 67:** Change "Exercise 62" to "Exercise 59."

- **Page 243, last line:** Instead of $\frac{137}{16} \cong 8.5625$, it should say $\frac{137}{16} = 8.5625$.

- **Page 252, Problems 14 and 15:** L_f and U_f are printed in the wrong font: They should be ordinary italics, not script letters.

- **Page 281, proof of (5.8.3), first line:** Change "$f(x) - f(x)$" to "$g(x) - f(x)$."

- **Page 410, Exercise 78(b):** There's a sign error in the last term of the formula. It should be

$$f(b) - f(a) = f'(a)(b - a) + \frac{f''(a)}{2}(b - a)^2 + \int_a^b \frac{f'''(x)}{2}(x - b)^2 \, dx.$$

- **Page 514, formula (10.7.6):** The formula should have ds/dt in place of the first dx/dt:

$$\nu = \frac{ds}{dt} = \sqrt{\left(\frac{dx}{dt}\right)^2 + \left(\frac{dy}{dt}\right)^2}.$$

- **Page 516, Problem 38:** should read "from time $t = 0$ to time $t = 2\pi$" (not $t = 2t$).

- **Page 530, Example 1(a):** The condition on s should read

$$1 - 0.0001 < s \le 1.$$

- **Page 613, Problem 66:** The formula for s_q should be

$$s_q = \sum_{k=0}^{q} \frac{1}{k!}.$$

- **Page A-16, solution to Problem 41:** $\mathrm{range}(f) = \{-1, 1\}$.

- **Page A-24, solution to Section 3.6 Problem 67(b):** There's a sign mistake in the last term. But more importantly, this argument is misleading, because you cannot conclude that the limit of a difference is the difference of the limits unless you know that both limits exist. Instead, this should be read as an argument by contradiction: assuming that $g'(x)$ is continuous, it then follows from this computation that $\cos(1/x)$ has a limit as $x \to 0$, which is false.