Corrections for Part II of Calculus in Context. Most of these involve the Problem Sets. They correct typos and errors and improve the wording and phrasing.

Chapter 7

- Page 295. In the Mean Value Theorem, replace f(b) f(a) = f'(c)(a b) by f(b) f(a) = f'(c)(b a).
- Page 321. Line 6 from the bottom: Example 4.7, not Example 4.6.
- Page 328. Problem 7.21 is misnumbered: ii. is missing. Insert ii. $g(x) = x^{\frac{1}{2}} 2x^{-\frac{1}{2}}$.
- Page 328. Problem 7.22 iii. replace $g(t) = by \ s = g(t) = and$ in Problem 7.22 iv. replace $h(x) = by \ y = h(x) =$.
- Page 330. The numbering in Problem 7.31 omits v. Put in v. $y = \cos^3 x^2$
- Page 330. The numbering in Problem 7.32 repeats iii. Change the second iii to iv.
- Page 331. Problem 7.38. Change the second sentence to: Illustrate the form $\frac{dy}{dx} = \frac{dy}{du} \cdot \frac{du}{dx}$ of the chain rule.
- Page 331. Problem 7.44. In the last sentence delete "f and g and also"
- Page 331. Problem 7.45. Insert " ≥ 0 " at the very end of the problem (before the ?).
- Page 333. The instructions for Problem 7.56 are better worded as follows: Replace "(b) the local maximum and minimum values of f" by "(b) the values of the variable x at which f has a local maximum or a local minimum."
- Page 338. Problem 7.81. Replace "Problem 1.23" by "Problem 1.22"
- Page 338. Problem 7.82. Replace $(\operatorname{sech} x)(2 \tanh^2 x)$ by $(\operatorname{sech} x)(2 \tanh^2 x 1)$.
- Page 338. Problem 7.84. Replace "symmetric about the x-axis" by "symmetric about the y-axis".
- Page 339. Problem 7.86. Graph (f) should not be broken and its tangent at (0,0) should have slope -2.
- Page 339. Problem 7.87. Insert "so that" after "all x except x = 3,''

Page 340. Problem 7.87 iii. It should be $g''(x) = \frac{-2}{(x+3)^2}$ and not $g''(x) = -\frac{-2}{(x+3)^2}$

Chapter 8

- Page 353. At the end of Example 8.2 replace "72.26 pounds" by "78.26 pounds"
- Page 377, line 4. Delete the ! in "index! of refraction".
- Page 390. In the second line replace "less that" by "less than"
- Page 391. Problem 8.4. In the next to last line omit "the". In the last line insert "of x_0 " after "estimate".
- Page 392. Problem 8.11. In the fourth line replace \$39,476 by \$39,476,000
- Page 394. Problem 8.19. Change "The edge of the platforms are at the same height, and they are separated by a distance of 20 m." to "The platforms have the same height and their edges are 20 meters apart."
- Page 396. Problem 8.23. Replace $\frac{13}{16}$ by $\frac{14}{16}$.
- Page 396. Problem 8.26. Change the parenthetical remark as follows: According to records of the Golden Gate Bridge Highway & Transportation District, San Francisco,

before the structural modifications the tension in the main cables at the towers had been 54,000,000 pounds under dead load only and 64,100,000 pounds under dead plus live load.

- Page 397. Problem 8.29, third line replace "between t = 0 to t = 10" by "between t = 0and t = 10"
- Page 397. Problem 8.30i. In line 3 it should read " $[0, \frac{r}{2}], [-\frac{r}{2}, \frac{r}{2}]$, and $[-\frac{r}{2}, 0]$, respectively."
- Page 400. Problem 8.33iii. It should be "diameter" not "diameters"
- Page 403. In the first line insert "lens equation" after "aspheric".
- Page 403. Problem 8.42iii. The "X" should be an "x".
- Page 403. Problem 8.43vi. Delete "the right branch of"

Chapter 9

- Page 433. Example 9.18. No comma after "calculus"
- Page 466. Problem 9.16i. Change " $x_4 = 2$ " to " $x_4 = 2\frac{1}{3}$ "
- Page 467. Problem 9.21. In the last line replace $\sqrt{10}^3$ by $\sqrt{6}^3$ and 13.63 by 2.34.
- Page 471. Problem 9.40. Change "of $\cos x$, $(-\infty, \infty)$ for" to "of $\cos x$ over $(-\infty, \infty)$ for" Problem 9.41. Change "of $\sinh x$, $(-\infty, \infty)$ for" to "of $\sinh x$ over $(-\infty, \infty)$ for"
- Page 474. Problem 9.73. Insert three minus signs on the last line: $-\frac{1}{\sqrt{1-x^2}}$, $\cos^{-1}x = -\sin^{-1}x + C$ and $\cos^{-1}x = -\sin^{-1}x + \frac{\pi}{2}$.
- Page 475. Problem 9.77. The last line should have another parenthesis) after the last $(2c)^2$
- Page 476. Project 9.78. In line 3 insert "but" after "barrels,"
- Page 477. Problem 9.79ii. Delete "and the fact that $\theta = \tan^{-1} x$ "
- Page 477. Problem 9.80ii. It should be ln not ł.

Chapter 10

- Page 482. In line three from the bottom, the number 1,435,778 should be 1,435,773.
- Page 488. In the line before the volume formula for V_2 replace "when $x = c, u = R^2 c^2$ " by "when $x = s, u = R^2 - s^2$ "
- Page 511. Mid-page: replace "from apoapsis to periapsis" by "from aphelion to perihelion"
- Page 512. Example 10.7 line 5: Replace "periapsis" by "perihelion"
- Page 524. Problem 10.2. in the last line insert "m" after "b = 14.3"
- Pages 524 and 5.25. In order to avoid confusion with the use of the symbol a in Figure 10.3 and in the discussion on page 482, it would be better to use the symbol h in place of the a in Figure 10.38 and in Problems 10.2 and 10.3.
- Page 526. The line above Problem 10.7. Replace "its" by "the" and "location" by "situation"
- Page 528. Problem 10.14i. In the expression for A(c) replace $\frac{c}{2}\sqrt{1-(\frac{c}{a})^2}$ by $\frac{ac}{2}\sqrt{1-(\frac{c}{a})^2}$.
- Page 533. Problem 10.32. In line three insert "are" after "Earth"
- Page 534. Problem 10.33ii. In line two delete "P = ".
- Page 535. Problem 10.38. In line three replace "Then show that" by "Explore whether". Then insert at the end of line five: Start by studying $f(x) = x - \varepsilon \sin x - C$ for $x \ge 0$ with $C = \frac{2\pi t}{T}$ a positive constant. Show that f(x) is an increasing function,

that it is concave up over the intervals $(0, \pi), (2\pi, 3\pi), (4\pi, 5\pi), \ldots$, and concave down over $(\pi, 2\pi), (3\pi, 4\pi), (5\pi, 6\pi), \ldots$. Turn to the special case $\varepsilon = \frac{1}{2}$. Use https://www.desmos.com/calculator to graph $y = x - \frac{1}{2} \sin x$ and note that the graph of f(x) is the downward shift of this graph by C units. Experiment with different values of $C = \frac{2\pi t}{T}$ and consider the assertions of Problems 7.91(i) and (ii).

- Page 535. Problem 10.39. Replace "It is apparent that" by "If it converges to a solution (note that this may or may not happen)". Then delete: "(But the latter is simpler to apply.)"
- Page 538. Line 5 from the top. Delete "of" in "We'll compute of"

Chapter 11

- Page 554, near the bottom. The centered line $y_i = y_0 + hF(x_{i-1}, y_{i-1})$ should read $y_i = y_{i-1} + hF(x_{i-1}, y_{i-1})$. In addition, to avoid possible confusion with derivatives, x'_1 and y'_1 are better written as \bar{x}_1 and \bar{y}_1 .
- Page 607. Problem 11.30. Replace $6x^2 + 5 = 0$ by $6x^2 5 = 0$. (It was the intention to provide two "real" examples and conclude the problem with the two "complex" examples $x^2 + 1 = 0$ and $x^2 + 5 = 0$.)
- Page 607. Problem 11.33. In the first line delete "q =".
- Page 608. In the third line it should read "three" not "four".
- Page 609. Problem 11.45. Delete "Why is there a conflict with this description?"
- Page 612. Problem 11.52. The first line should read "where a is the semimajor axis and bis the semiminor axis.
- Page 613. Problem 11.55. Replace $a = \text{and } \varepsilon = \text{by } a \approx \text{and } \varepsilon \approx$
- Page 613. Problem 11.56. Replace $\varepsilon = by \varepsilon \approx$
- Page 618. Problem 11.66ii. Replace $\sqrt{\frac{m}{v}}$ by $\sqrt{\frac{m}{k}}$

Chapter 12

- Page 628. Line 4 from the bottom. Replace $\varepsilon = \frac{a}{c}$ by $\varepsilon = \frac{c}{a}$.
- Page 629. Line 4. The word "right" should be "right".
- Page 643. First line. Replace "components of F" by "components of the centripetal force"
- Page 661. Problem 12.6. Add after the word constants: "with $c \neq 0$ ".
- Page 663. Problem 12.19. The formula should be $\tan(\theta \frac{3\pi}{4}) = \frac{\sin\theta + \cos\theta}{\cos\theta \sin\theta}$ (no minus). Page 663. Problem 12.20i. Insert "or $\gamma = 0$ " after " $\gamma = \tan^{-1} \frac{f'(\theta)}{f(\theta)} + \frac{\pi}{2}$ "
- Page 666. Problem 12.31. In the first line replace ", $0 \le \theta < \pi$, lies on" by "is".
- Page 668. Problem 12.39. In the last line replace the last period by a "?"
- Page 668. Three lines above Figure 12.42. Replace "their magnitudes are given by" by "they are given by"

Page 669. Problem 12.43. Replace $F(t) = K \frac{m}{r(t)^2}$ by $F(t) = K \frac{m}{r(t)^3}$.