

Errata:

Page 32, problem 16b: “Draw a careful graph” should be “Assuming that the car starts at the origin, draw a careful graph.”

Page 35, problem 38: “his acceleration is reduced to 3 m/s^2 .” should be “his acceleration is 3 m/s^2 , upward”

Page 49, problem 4: “Bob walks” should be “Bob and Irene start off together. Bob walks.”

Page 71, problem 10a: “are correct” should be “can be correct,” two places.

Page 74, problem 12: section reference flag **4.7** should be **4.4**.

Page 75, problem 18: “height and vertical distance” should be “height and horizontal distance.”

Page 77, Problem 28. “velocity” should be “speed”

Page 93, problem 14: “ $1.3 \times 10^6 \text{ m/s}$ ” should be “ $1.3 \times 10^6 \text{ m/s}^2$.”

Page 113, problem 5: “ $7.8 \times 10^{10} \text{ km}$ ” should be “ $7.8 \times 10^{10} \text{ m}$.”

Page 114, problem 9. “ $\mu_k = 0.75 \text{ m}$ ” should be “ $\mu_k = 0.75$ ”

Page 119, problem 40, line 3: “moving in a circle at constant velocity” should be “moving in a circle at constant speed.”

Page 139, problem 5: “1000 m. Assume that” should be “1000. The mass of the cannonball is 1 kg. Assume that.”

Page 139, problem 8: “50 J” should be “5 J.”

Page 141, problem 20: “as it slowly lowers” should be “as it lowers.”

Page 164, problem 26c: “(magnitude and direction)” should be “(magnitude and direction) right after the collision.”

Page 165, problem 30, last full line: “velocity, magnitude, and direction” should be “velocity (magnitude and direction)”

Page 169, Equations 9.1: a should be α in the right-hand equations, three places.

Page 177 Example 9.7 question: “where must the force be applied” should be “where must the cable be attached”

Page 179: first paragraph after the example: “referenced to” should be “about a single axis that passes through”

Page 179 second paragraph after the example: “point chosen as origin, the point about which rotational inertia and torque are defined.” should be “point chosen as origin.”

Page 179, second paragraph after the example: “as long as the point chosen as the origin for defining torques and rotational inertia is the center of mass of the object.” should be “as long as the axis chosen as the origin for defining torques and rotational inertia passes through the center of mass of the object, and as long as any angular velocity and angular acceleration lie along that axis.”

Page 183, Chapter formulas box: a should be α in the rotational kinematics equations, three places.

Page 186: Eliminate section reference flag 9.5 from Problem 18.

Page 186: Add section reference flag 9.5 to problem 19.

Page 222, problem 11: The picture accompanying this problem has the points of support for the bungee cords so far apart that the angle of the bungee-cord force will change as the boy rises upward. As a result, this will not be simple harmonic motion, and this problem would be very difficult to solve. The third printing has an updated picture. I would not assign this problem unless access to the third printing picture is available for all students.

Page 238, Example 12.4, 5th line from the bottom: $v = f / \lambda$ should be $v = f\lambda$.

Page 254, problem 38: 400 V/C should be 400 V/m.

Page 270, problem 12, last line: “To what temperature” should be “By how many degrees”.

Page 280, problem 24: “10-gram” should be “20-gram”.

Page 287, Example 15.1, Answer: “for the pressure P .” should be “for the pressure P . (The fact that the gas weighs 22 grams does not matter.)”

Page 294, Example 15.4c: The first equation of part (c),

“ $Q_1 = Q_{\text{out}} = mc(T_{\text{Al}} - T) = (0.2 \text{ moles})(870 \text{ J/Mole} \times \text{K})(400 \text{ K} - 375 \text{ K}) = 4350 \text{ J}$ ” should be

“ $Q_1 = Q_{\text{out}} = mc(T_{\text{Al}} - T) = (0.2 \text{ kg})(900 \text{ J/kg} \times \text{K})(400 \text{ K} - 375 \text{ K}) = 4500 \text{ J}$ ”

Page 294, Example 15.4c: The second equation of part (c)

$$\left. \varepsilon = \frac{W}{Q_1} = \frac{1250\text{J}}{4350\text{J}} = 0.29 \right\} \text{should be}$$

$$\left. \varepsilon = \frac{W}{Q_1} = \frac{1250\text{J}}{4500\text{J}} = 0.28 \right\}$$

Page 296, problem 6: “ 1×10^8 g” should be “108 g”.

Page 297, problem, 14: “A canister containing helium gas” should be “A canister containing 8 grams of helium gas”

Page 321, Example 16.9, first line: “ $4\mu\text{C}$ ” should be “ $2\mu\text{C}$ ”.

Page 329, problem 44, second line: “sheet” should be “plate.”

Page 330, problem 48: “*** 48^{f} ” should be “** 48^{f} ”.

Page 331, problem 52, line 2: “has a radius of 5 mm and carries” should be “carries”.

Page 353, problem 30: “V/C” should be “V/m”

Page 399, Example 19.8 question statement: “1.00 amp” should be “0.318 amp”

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Page 399, Example 19.8 picture: “1.00 A” should be “0.318 A”

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Page 412, Example 20.1 question statement: “ 2×10^{-6} T” should be “ 4×10^{-6} T”.

Page 420, last line of first paragraph: “inductance of a” should be “inductance of a coil”.

Page 421, Example 20.8, Last line of part A solution: “40 W” should be “40 Ω ”.

Page 425, 4th line: “English” should be “Scottish.”

Page 443, Figure 21.7(a): “ $n_1 = 0$ ” should be “ $n_1 = 1$ ”

Page 474, Example 22.9, next to last line: “16.9” should be “6.9”.

Page 476, problem 12: section reference flag **22.6** should be **22.2**.

Page 481, problem 37a: “lens” should be “mirror”.

Page 482, problem 43, third line: “lens” should be “mirror”.

Page 487, Example 23.1, equation: “0.005” should be “0.05”. Two lines below: “(0.005) = 1 cm” should be “0.05 = 10 cm”. Two lines below that: “0.005 = 0.01” should be “0.05 = 0.1”. Same line: “2 cm” should be “20 cm”.

Page 491, Example 23.3, second equation: “0.07521°” should be “0.7521°”. Third equation: “0.07521°” should be “0.7521°”

Page 492, Example 23.4, second line under first equation: “0.07521°” should be “0.7521°”. Second equation: “ 1.67×10^{-8} ” should be “ 1.67×10^{-6} ”.

Page 507, problem 22, 4th line: “What will be” should be “If the slit width is 10 μm , what will be”.

Page 545, first term in Equation 25.2: “J/kg” should be “J·s”

Page 558, problem 2: “400 nm” should be “310 nm”.

Page 575, Example 26.4, last equation: “ 1.6×10^{-19} eV” should be “ 1.6×10^{-19} J”.

Page 578, problem 6: 15,826.2 MeV should be 14,895.08 MeV.

Page 581, problem 24: 18. MeV should be 1.8043 MeV.

Page 595, neutron mass: 938.57 MeV should be 939.57 MeV

Page 599, Chapter 1, problem 7: 24 m/s should be 24 m.

Page 599, Chapter 3, problem 1: Add answer, “86m, 55° S of W. (Be sure to show your diagram.)”

Page 599, Chapter 4, problem 25. $\cos(2\theta)$ should be $\sin(2\theta)$

Page 600, Chapter 6, problem 5b: 4.2×10^{17} N should be 4.2×10^{16} N. Also 7.0×10^{-8} N should be 7.0×10^{-9} N.

Page 600, Chapter 6, problem 21: 5 N should be 0.5 kg.

Page 600, Chapter 7, problem 15: “2.8 mv” should be “2.8 m”

Page 600, Chapter 7 problem 19: “80 J” should be “8 J”

Page 600, Chapter 8, problem 23: “15m/s south” should be 14.9 m/s south,”

Page 601, Chapter 10, problem 13a: “0.375 g/m³” should be “0.75 g/m³”

Page 601, Chapter 10, problem 13d: “540 kg” should be “540 g”.

Page 602, Chapter 12, problem 25: “0.57” should be “0.63”.

Page 602, Chapter 13, problem 3: 16 m/s should be 320 m/s.

Page 602, Chapter 14, problem 3: 1447 K should be 1477 K.

Page 602, Chapter 15, problem 19: “3.8 cm³” should be “38 cm³”.

Page 602, Chapter 16, problem 11: “6.25 N” should be “40 N”.

Page 603, Chapter 17, problem 15: -9.6×10^{-19} J should be 9.6×10^{-19} J.

Page 604, Chapter 19, problem 7: “ 3.6×10^{-11} N” should be “ 2.54×10^{-11} N”

Page 604, Chapter 19, problem 13a: “31 nm” should be “31 m”.

Page 604, Chapter 19, problem 19: “ 10^{-3} ” should be “ 10^{-4} ”.

Page 604, Chapter 19 problem 33: “ 4.56×10^{-4} ” should be “ 9.42×10^{-6} ”

Page 605, Chapter 20, problem 27: “ 4.77×10^8 ” should be “ 6.78×10^{13} ”

Page 606, Chapter 21 problem 27: “400 nm” should be “Exact answers will depend on how you estimate from the graph. 400 nm”.

Page 606, Chapter 21, problem 27: “50.26°” should be “20.26°” and “49.38°” should be “19 38°”.

Page 606, Chapter 24, problem 3: 0.6 c·s should be 0.6 s.

Page 607, Chapter 24, problem 9: barge should be car (in two places).

Page 607, Chapter 24, Problem 23a: “[$t + v/c\Delta x$]” should be “[$t + v/c^2\Delta x$]”

Page 607, Chapter 24, problem 31c: $v_{\perp}\sqrt{1-v^2/c^2}c$ should be $v_{\perp}\sqrt{1-v^2/c^2}$.