Selected Answers

Chapter 1

1.1 Skill Practice (pp. 5–6) **1.** exponent: 12, base: 6 **3.** 60 **5.** 12 **7.** 12 **9.** 3 **11.** 10 **13.** $\frac{1}{3}$ **17.** seven to the third power, $7 \cdot 7 \cdot 7$ **19.** three tenths to the fourth power, $0.3 \cdot 0.3 \cdot 0.3 \cdot 0.3$ **21.** n to the seventh power, $n \cdot n \cdot n \cdot n \cdot n \cdot n \cdot n$ **23.** t to the fourth power, $t \cdot t \cdot t \cdot t$ **25.** The base was used as the exponent and the exponent was used as the base; $5^4 = 5 \cdot 5 \cdot 5 \cdot 5 = 625$. **27.** 100 **29.** 1331 **31.** 243 **33.** 1296 **35.** $\frac{27}{125}$ **37.** $\frac{1}{216}$ **39.** 1.21 **41.** 40.5 **43.** 9.6

1.1 Problem Solving (pp. 6–7) **49.** 162.5 cm **51. a.** 12 in. **b.** 144 in.^{2} **53.** New England Patriots

1.2 Skill Practice (pp. 10–11) **1.** Square 4. **3.** 8 **5.** 14 **7.** $3\frac{3}{5}$ **9.** $63\frac{3}{4}$ **11.** 21 **13.** 73.5 **15.** $12\frac{1}{2}$ **17.** 48 **21.** $\frac{1}{2}$ was multiplied by 6 before squaring 6; $20 - \frac{1}{2} \cdot 6^2 = 20 - \frac{1}{2} \cdot 36 = 20 - 18 = 2$. **23.** 29 **25.** 126 **27.** 0.75 **29.** 3 **33.** $(2 \times 2 + 3)^2 - (4 + 3) \times 5$

1.2 Problem Solving (pp. 11–12) **35. a.** \$22.87 **b.** \$2.13 **37.** *Sample answer:* $(3 \times 4) + 5$ **39. a.** \$380, \$237.99; \$142.01 **b.** *Sample answer:* You could write an expression showing the difference of your income and expenses as $P = 10s - (4.50m + 12.99)$.

1.2 Graphing Calculator Activity (p. 13) **1.** 5 **3.** 0.429 **5.** 0.188 **7.** 40.9 BMI units

1.3 Skill Practice (pp. 18–19) **1.** rate **3.** $x + 8$ **5.** $\frac{1}{2}m$ **7.** $7 - n$ **9.** $\frac{2t}{12}$ **11.** $2k - 7$ **15.** $4v$ **17.** $\frac{16}{p}$ **19.** $7 - d$ **21.** $12y$ **23.** 1.5 pints per serving **25.** \$6.80 per share **27.** Feet should cancel out; \$54. **29.** \$19.50 for 1 h

1.3 Problem Solving (pp. 19–20) **31.** $19.95t + 3$; \$102.75 **33. a.** \$.055, \$.06 **b.** 48 oz container **c.** \$.96 **35.** \$500 **37. a.** $12g + h + \frac{1}{4}c$ **b.** 247; 376.75; 242

1.4 Skill Practice (pp. 24–25) **1.** *Sample answer:* $3x + 5 = 20$ **3.** $42 + n = 51$ **5.** $9 - \frac{t}{6} = 5$ **7.** $9(t + 5) < 6$ **9.** $8 < b + 3 < 12$ **11.** $10 < t - 7 < 20$ **13.** $p \geq \$12.99$ **15.** The wrong inequality symbol is used; $\frac{t}{4.2} \leq 15$.

17. solution **19.** not a solution **21.** not a solution **23.** solution **25.** solution **27.** not a solution **29.** 5 **31.** 12 **33.** 9 **35.** $3x - 2 = x + 5$; solution

1.4 Problem Solving (pp. 25–26) **39.** 7.5 mi **41.** 167 h **43.** \$100 **45. a.** $6r + 5(10 - r) \geq 55$ **b.** Yes; you will earn \$30 running errands and \$25 walking dogs; $30 + 25 = 55$. **c.** Yes; if you work 10 hours running errands, you will earn \$60. You will not meet your goal if you work all 10 hours walking dogs.

1.5 Skill Practice (p. 31) **1.** *Sample answer:* $d = rt$ **3.** You know how many collars you've made, how much you have spent to make them, and how much money you want to make. You need to find what to charge for each collar so you make \$90. **5.** You know the temperature in Rome and the temperature in Dallas. You know the formula to convert Fahrenheit temperatures to Celsius temperatures. You need to find the higher temperature. **7.** The formula for perimeter should be used, not area; $P = 2\ell + 2w$; $P = 2(200) + 2(150) = 700$; $10(700) = \$7000$. **9.** $P = I - E$

1.5 Problem Solving (pp. 32–33) **15.** 110.25 in.^{2} **17.** 2 water bottles **19. a.** 960 ft **b.** 480 ft

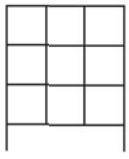
21. a.

Room size (feet)	1 by 1	2 by 2	3 by 3	4 by 4	5 by 5
Remaining area (square feet)	431	428	423	416	407

b. $1 \leq s \leq 5$; 5 ft

1.5 Problem Solving Workshop (p. 34)

1. 9 pieces of cake; Draw a diagram of a 9 inch by 11 inch pan and divide it into 3 inch by 3 inch pieces. From the diagram you see that the cake can be divided into 9 pieces of cake.



3. The equation should be $3x + 6 = 12$ because there are only 3 spaces between the 4 floats; $3(2) + 6 = 12$.

1.6 Skill Practice (pp. 38–39) **1.** input; output **3.** domain: 0, 1, 2, and 3, range: 5, 7, 15, and 44 **5.** domain: 6, 12, 21, and 42, range: 5, 7, 10, and 17 **7.** not a function **9.** The pairing is a function. Each input is paired with only one output.