Additional Exercises 5.1

Write each decimal in words.

1. 2.95   1. _____

2. 3.621   2. _____

3. 0.01   3. _____

4. 36.401   4. _____

Write each decimal number in standard form.

5. Fifteen and five thousandths   5. _____

6. Four hundred seven and seventeen hundredths   6. _____

7. Nine and two hundred two thousandths   7. _____

8. Thirty-five ten thousandths   8. _____

9. Twelve and two hundred five ten thousandths   9. _____

Write each decimal as a fraction or mixed number. Write your answer in simplest form.

10. 0.08   10. _____

11. 0.205   11. _____

12. 10.5   12. _____

13. 4.25   13. _____

14. 50.05   14. _____

Insert <, >, or = between each set of numbers to form a true statement.

15. 0.036   0.094

                                                              15. _____
16. 0.16   0.156
                                                              16. _____
17. −0.23   −0.31
                                                              17. _____
18. −7.01   −7.1
                                                              18. _____

19. A new dining room set cost $1295.86 and is financed for   19. _____
    one year. Find the monthly payments rounded to the nearest
    cent.

20. Susan is attending a college that is 785.89 miles away from   20. _____
    home. Round this distance to the nearest mile.

Additional Exercises 5.2

Perform the following operations.

1. $3.6 + 2.98$

1. _____

2. $8.14 + 3.16$

2. _____

3. $0.0006 + 1.134$

3. _____

4. $31 + 0.165 + 2.63$

4. _____

5. $57.4 + 6.95 + 0.084$

5. _____

6. $9.3 - 4.71$

6. _____

7. $6 - 4.12$

7. _____

8. $3.25 + 7.62 - 10.38$

8. _____

9. $17.35 - 15$

9. _____

10. Subtract 3.5 from 5.8.

10. _____

11. Subtract 7.6 from 12.35

11. _____

12. Subtract 12.9 from 15.9

12. _____

Additional Exercises 5.2 *(cont.)*

13. Compute the total monthly cost of utilities given the information shown:

    Combined cost of water, sewage and electricity per month: $45.38

    Average cost of telephone per month: $68.20

    Average cost of natural gas per month: $38.25

    Monthly cost of cable television: $42.60

13. _____

14. A bottle of shampoo costs $2.50 plus $0.15 tax. What is the total cost?

14. _____

15. How much fencing is needed to enclose the field with the dimensions shown?

    12.5 yds.

    6.2 yds.   10.5 yds.

    14.6 yds.
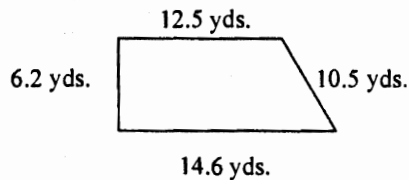
15. _____

16. Louis bought $38.09 worth of groceries. If he paid with two $20 bills, what was his change?

16. _____

17. Simplify by combining like terms: $1.04x + 1.3x$

17. _____

18. Evaluate $x + y$ if $x = 1.37$ and $y = 0.32$.

18. _____

19. Evaluate $x - y$ if $x = 3.2$ and $y = 0.85$.

19. _____

20. Simplify by combining like terms: $0.5x - 3.2x + 3.57x$

20. _____

Additional Exercises 5.3

Multiply.

1. 4.9
    × 0.7

2. 3.7
    × 0.5

3. 0.78
    × 0.22

4. −3.7
    × 5.3

5. −4.2
    × 0.7

6. 1.021
    × 0.025

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Multiply.

7. 3.89×10

8. 1.02×100

9. 5.013×100

10. 3.5×0.001

11. $(3.2)(0.2)(0.5)$

12. $(7.29)(0.5)$

13. $(-0.2)(-0.38)$

14. Find the circumference of a circle with diameter of 20 cm. Use 3.14 as an approximation of π. ($C = \pi d$).

15. One cracker has 0.75 grams of fat. How much fat is in 8 crackers?

16. A meter is approximately equal to 39.37 inches. Susie is 1.2 meters tall. Find her approximate height in inches.

17. Evaluate xy if $x = 3.25$ and $y = 0.7$

18. Evaluate $3x$ if $x = 1.2$

19. Find the perimeter of a square with sides of length 3.2 yards.

20. Find the area of a rectangle with width 2.35 ft. and length 4.8 ft.

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

Additional Exercises 5.4

Divide.

1. $0.8\overline{)0.48}$

2. $5\overline{)2.55}$

3. $0.07\overline{)21}$

4. $0.6\overline{)24.12}$

5. $7\overline{)4.97}$

6. $6.25 \div 3.5$ (Round to the nearest thousandth.)

7. $12 \div 1.02$ (Round to the nearest thousandth.)

8. $54 \div 0.09$

9. $\dfrac{3.95}{0.05}$

10. Divide 529.35 by 1.8.   (Round to the nearest hundredth.)

11. Divide 49.6 by 0.3.   (Round to the nearest hundredth.)

12. Divide 4.54 by 0.07.   (Round to the nearest hundredth.)

13. $\dfrac{36.52}{100}$

14. $\dfrac{8.36}{1000}$

15. $\dfrac{16.28}{10}$

16. $\dfrac{0.73}{0.001}$

17. The total cost of a loan is $11,287.64. How many monthly payments of $217.07 would it take to pay off the loan?

18. A high school basketball player scored 386 points in 16 games. What was her average number of points per game? Round to the nearest tenth.

19. Evaluate $x \div y$ if $x = 2.5$ and $y = 0.02$.

20. Evaluate $2x \div y$ if $x = 0.025$ and $y = 2.5$.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

Additional Exercises 5.5

Write each fraction as a decimal.

1. $\dfrac{1}{8}$ 1. _____

2. $\dfrac{1}{5}$ 2. _____

3. $\dfrac{1}{4}$ 3. _____

Write each fraction as a decimal. Round to the nearest hundredth.

4. $\dfrac{2}{3}$ 4. _____

5. $\dfrac{1}{7}$ 5. _____

6. $\dfrac{3}{7}$ 6. _____

7. $\dfrac{3}{13}$ 7. _____

8. $\dfrac{5}{17}$ 8. _____

Write as a decimal rounded to the nearest thousandth place.

9. A basketball player made $\dfrac{12}{17}$ of his shots for the season.   9. _____

10. In a recent election for the U.S. Senate, one candidate got about   10. _____
$\dfrac{65}{109}$ of the votes.

Additional Exercises 5.5 (cont.)

Insert <, >, or = to form a true statement.

11. 0.0438   0.0435   **11.** _____

12. $\dfrac{2}{7}$ $\dfrac{4}{15}$ **12.** _____

13. $\dfrac{7}{8}$ 0.9167   **13.** _____

Write the numbers in order from smallest to largest.

14. 0.725   0.7252   0.72152   **14.** _____

Simplify each expression.

15. $(0.05)^2$ **15.** _____

16. $200 - 58 \times 2.76$ **16.** _____

17. $0.4(7.5 - 1.9)$ **17.** _____

18. $\dfrac{2.75 + 1.25}{10}$ **18.** _____

Find the area of each triangle. Use the formula $A = \dfrac{1}{2}bh$.

19.   **19.** _____

5.3 in.

4.2 in.

20.   **20.** _____

1.6 m

2.8 m
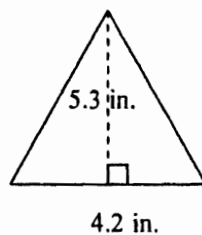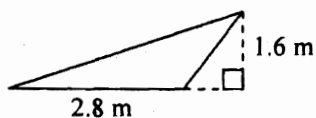
Additional Exercises 5.6

Solve and check. (Round answers to the nearest thousandth if needed.)

1. $x + 1.6 = 3.4$

    1. _____

2. $-3.9 = y + 8.65$

    2. _____

3. $1.1x = 6.6$

    3. _____

4. $\dfrac{x}{5} = 3.285$

    4. _____

5. $0.50 = 4x$

    5. _____

6. $3(x - 2.1) = 2x - 6.9$

    6. _____

7. $2x + 3x = 3.6$

    7. _____

8. $x - 0.5x = -18.5$

    8. _____

9. $3(x + 2) = -12.6$

    9. _____

10. $1.5x - 9.72 = 0.5x + 8.65$

    10. _____

11. $2(x - 1.5) = 8.352$

    11. _____

12. $4x + 7.12 = 2(3x - 5.8)$

    12. _____

13. $0.75x = 15.35$

    13. _____

14. $\dfrac{x}{1.5} = 3.80$

    14. _____

15. $x - 4.59 = 6.85$

    15. _____

16. $2x + 0.5x = -125$

    16. _____

17. $-1.1x = -99$

    17. _____

Solve. Round to the nearest cent.

18. Four friends went to lunch. The total bill was $38.65. Find the average cost for each of the four friends.

    18. _____

19. Five books cost $237.59. What is the average cost of each book?

    19. _____

20. An order for two pizzas is $23.04 Find the cost of one pizza.

    20. _____

Additional Exercises 5.7

Find the mean, median, and mode. If necessary, round each mean to one decimal place.

1. 15, 19, 24, 17, 31

1. _____

2. 7.5, 8.9, 4.6, 9.5, 8.6, 8.9

2. _____

3. 392, 476, 831, 956, 371, 429, 531, 476

3. _____

4. 17, 21, 36, 48, 59, 61

4. _____

5. 0.3, 0.4, 0.7, 1.2, 1.4, 0.8, 0.7

5. _____

6. 98, 97, 84, 79, 88, 88

6. _____

7. 36, 37, 32, 41, 38

7. _____

8. 32, 78, 95, 84, 96

8. _____

9. 329, 378, 294, 199, 329, 360

9. _____

10. 6.3, 7.5, 8.2, 8.6, 7.4, 6.3

10. _____

11. Find the GPA. Round to two decimal places.

Grade	Credit Hours
B	3
C	3
B	4
A	3

11. _____

Additional Exercises 5.7 (cont.)

Use the following table for problems 12 - 20.

Tallest Buildings in New York City	Height in Feet	Height in Meters	Floors
Empire State Building	1250	381	102
Chrysler Building	1046	319	77
New York Times Tower	1046	319	52
American International Building	952	290	66
40 Wall Street	927	283	70
Citigroup Center	915	279	59
Trump World Tower	861	262	72
GE Building	850	259	69
CitySpire center	814	248	75
One Chase Manhattan Plaza	813	248	60

12. Find the mean height in feet.   12. _____

13. Find the mean height in meters.   13. _____

14. Find the mean number of floors.   14. _____

15. Find the median for the height in feet.   15. _____

16. Find the median for the height in meters.   16. _____

17. Find the median for the number of floors.   17. _____

18. Find the mode for the height in feet.   18. _____

19. Find the mode for the height in meters.   19. _____

20. Find the mode for the number of floors.   20. _____

Additional Exercises 6.1

Write each ratio using fractional notation in simplest form.

1. 6 to 17

2. 8 to 24

3. $\frac{3}{5}$ to $\frac{4}{8}$

4. 0.2 to 3.1

5. 12 to 18

6. 2.8 to 5.6

7. 60 miles to 15 miles

8. 280 acres to 120 acres

9. 78 gallons to 86 gallons

10. $\frac{1}{2}$ cup to $\frac{1}{6}$ cup

11. 0.6 meters to 3 meters

A rectangular storage building is 20 feet long and 15 feet wide.

12. Find the ratio of the width to the length in simplest terms.

13. Find the ratio of the length to the perimeter of the building.

14. Find the ratio of the width to the perimeter of the building.

A math class has 18 women and 10 men.

15. Find the ratio of men to women.

16. Find the ratio of men to total students.

Write each rate as a unit rate.

17. 480 calories in 8 ounces

18. 520 miles in 8 hours

Find each unit price and decide which is a better buy.

19. Treated lumber: $3.79 for an 8-foot board or $6.18 for a 12-foot board.

20. 50 aspirin tablets for $3.79 or 100 aspirin tablets for $5.85.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

7. _____

8. _____

19. _____

20. _____

Additional Exercises 6.2

Write each sentence as a proportion.

1. 3 eggs is to 6 cups of flour as 12 eggs is to 24 cups of flour.

1. _____

2. 0.5 meters is to 5 kilometers as 3 meters is to 30 kilometers.

2. _____

3. $\frac{1}{3}$ page is to 20 minutes as 1 page is to 60 minutes.

3. _____

Determine whether each proportion is a true proportion.

4. $\frac{15}{9} = \frac{5}{3}$

4. _____

5. $\frac{7}{8} = \frac{49}{56}$

5. _____

6. $\frac{3}{4} = \frac{7}{16}$

6. _____

7. $\frac{7}{32} = \frac{1}{4}$

7. _____

8. $\frac{4}{5} = \frac{28}{35}$

8. _____

9. $\frac{\frac{1}{2}}{3} = \frac{1.5}{9}$

9. _____

Additional Exercises 6.2 (cont.)

For each proportion, find the unknown number x.

10. $\dfrac{18}{30} = \dfrac{x}{5}$

10. _____

11. $\dfrac{5}{x} = \dfrac{7.5}{9}$

11. _____

12. $\dfrac{x}{30} = \dfrac{15}{25}$

12. _____

13. $\dfrac{16}{8} = \dfrac{4}{x}$

13. _____

14. $\dfrac{\frac{1}{2}}{\frac{1}{5}} = \dfrac{10}{x}$

14. _____

15. $\dfrac{5}{\frac{1}{6}} = \dfrac{\frac{6}{8}}{x}$

15. _____

16. $\dfrac{x}{20} = \dfrac{15}{25}$

16. _____

17. $\dfrac{1.5}{2.5} = \dfrac{x}{15}$

17. _____

18. $\dfrac{x}{16} = \dfrac{6}{4.8}$

18. _____

19. $\dfrac{x}{9} = \dfrac{1.2}{1.8}$

19. _____

20. $\dfrac{\frac{1}{5}}{8} = \dfrac{x}{15}$

20. _____

Additional Exercises 6.3

Solve.

Amanda's car averages 588 miles on a 21 gallon tank of gas.

1. How far can she drive on 6 gallons of gas?   1. _____

2. How many gallons of gas would she use on a 975 mile trip?   2. _____
   Round to the nearest tenth.

An 80-pound bag of ready to use concrete mix fills 8 cubic feet.

3. Joe needs 280 cubic feet of concrete, how many bags does he   3. _____
   need?

4. If Sue buys 10 bags, how many cubic feet will that fill?   4. _____

A animal shelter allows 150 square feet of yards space per dog.

5. Find the minimum yard space for 5 dogs.   5. _____

6. They plan to fence a rectangular area that is 30 by 10. Find 6. _____
   the maximum number of dogs the new yard can
   accommodate.

On a road map, 1 inch corresponds to 30 miles.

7. Find the distance represented by a line segment $2\frac{1}{4}$ inches long.   7. _____

8. If two cities are 150 miles apart, find the measurement on the   8. _____
   map.

Local sales tax is $6.25 for every $100 purchase.

9. If sales tax on a sofa is $18.75, what was the purchase price of   9. _____
   the sofa?

10. Find the sales tax on a refrigerator priced at $550. (Round to   10. _____
    the nearest cent.)

Additional Exercises 6.3 (cont.)

A survey revealed that 4 out of 5 people prefer vanilla ice cream to chocolate.

11. In a class of 30, how many students are likely to prefer chocolate ice cream?

11. _____

12. If 12 people in a room prefer chocolate, how many people are likely to be in the room?

12. _____

If a family drinks 2 gallons of milk every 3 days,

13. How many gallons of milk do they drink in a month (30 days)?

13. _____

14. How many gallons do they drink each week?

14. _____

15. If Hilda can word process and spell check 5 pages in 30 minutes, how long will it take her to finish her research paper which is 25 pages long?

15. _____

16. If a recipe calls for $2\frac{1}{2}$ cups of sugar for 2 dozen cookies, how much sugar is needed to make 6 dozen cookies?

16. _____

17. If $\frac{1}{2}$ inch represents 50 miles on a road map, what is the distance represented by $2\frac{1}{2}$ inches?

17. _____

18. A mix uses three eggs to make 12 pancakes. How many eggs are needed to make 36 pancakes?

18. _____

19. You burn about 200 calories while jogging for 45 minutes. How long would you have to jog to burn 600 calories?

19. _____

20. Judy reads 8 pages in 15 minutes. How many pages can she read in an hour?

20. _____

Additional Exercises 6.4

Find the square root of each.

1. $\sqrt{9}$

2. $\sqrt{100}$

3. $\sqrt{25}$

4. $\sqrt{16}$

5. $\sqrt{\dfrac{49}{64}}$

6. $\sqrt{\dfrac{1}{16}}$

7. $\sqrt{169}$

8. $\sqrt{121}$

9. $\sqrt{225}$

10. $\sqrt{\dfrac{169}{100}}$

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

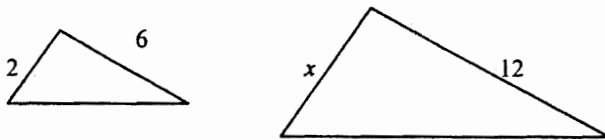7. _____
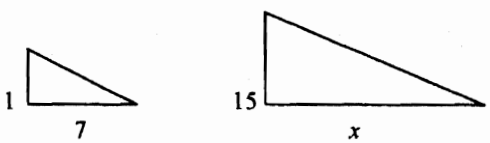
8. _____

9. _____

10. _____

Additional Exercises 6.4 (cont.)

11. $\sqrt{\dfrac{25}{49}}$

11. _____

12. $\sqrt{81}$

12. _____

Use Appendix E or a calculator to approximate each square root to the nearest thousandth.

13. $\sqrt{8}$

13. _____

14. $\sqrt{20}$

14. _____

15. $\sqrt{18}$

15. _____

16. $\sqrt{178}$

16. _____

Find the unknown length of each right triangle. Approximate to the nearest thousandth.

17.
5 ft.

7 ft.

17. _____

18.

16 cm

8 cm
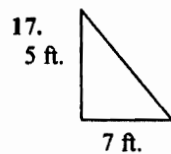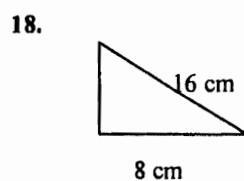
18. _____

19. Find the height of a building if a 10 foot ladder is placed 4 feet from a wall.

10

4

19. _____
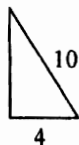
20. Find the length of a guy-wire attached to a 12 foot pole if it is tied 5 feet from the pole.

12

5

20. _____
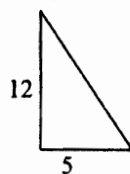
Additional Exercises 6.5

Find each ratio of the corresponding sides of the similar triangles.

1.

1. _____

2.

2. _____

3.

3. _____

4.

4. _____

5.

5. _____

6.

6. _____
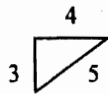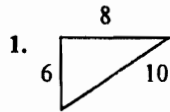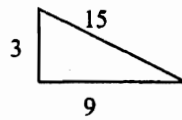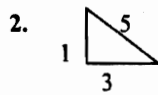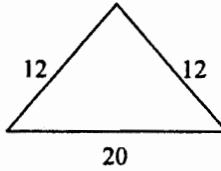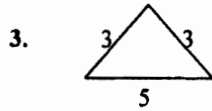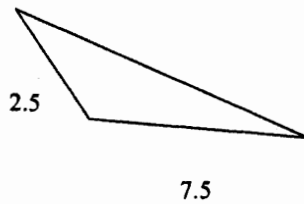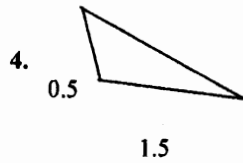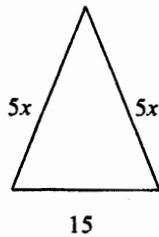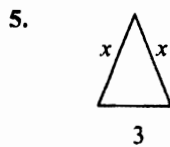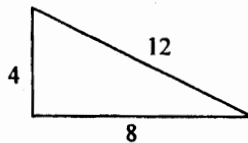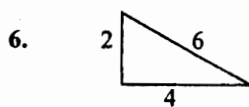
Additional Exercises 6.5 (cont.)
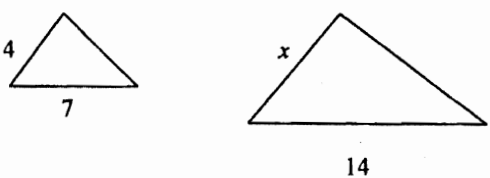
Given that the triangles are similar, find the length of the side labeled *x*.

7.

6
2 /
x / 12

7. _____

8.

1
7
15
x

8. _____

9.

1 / 1
5 / x

9. _____

10.

10
32
16
x

10. _____

11.

4
7
x
14

11. _____

12.

2.3 / 2.3
x / 8.7

12. _____

13.

8 / 15
x / 22.5

13. _____

14.

3
7.5
x
12.5

14. _____

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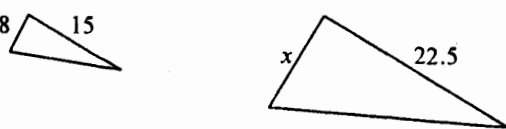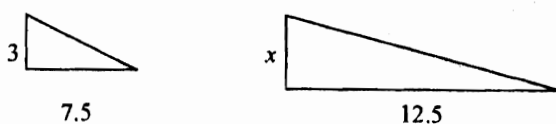
Additional Exercises 6.5 (cont.)

15.
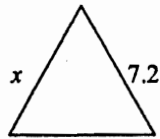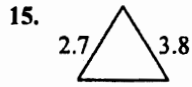
15. _____

16. If a 25 foot tree casts a 15 foot shadow, find the length of the shadow cast by a 40 foot tree.

16. _____

17. A flagpole 24 feet tall casts a 30 foot shadow. Find the length of the shadow cast by a 36 foot pole

17. _____

18. If a 12 foot tree casts a 7 foot shadow, find the length of the shadow cast by an 18 foot tree.

18. _____

19. Estimate the height of a building if the shadow cast by the building is 68 feet. At the same time, a 6 foot person casts an 8 foot shadow.

19. _____

20. Find the perimeter of triangle DEF, given that it is similar to triangle ABC

20. _____