Additional Practice

For Exercises 1–6,

a. Write a number sentence for the problem.
b. Estimate the answer.
c. Use mental arithmetic, a calculator, or some other method to find the exact answer.
d. Explain how your estimate helps you check the exact answer.

1. Ashley builds a rectangular dog pen. The width is 5.75 feet and the length is 7.25 feet. What is the area of the dog pen?

2. Tim is mailing some cards. Five cards each require $0.46 worth of postage. Two larger cards each require $0.92 worth of postage. What is the total postage Tim needs to pay?

3. Lamar has 3.6 meters of string. He makes a square with congruent sides. What is the length of each side?
4. A grocer purchases 20.2 pounds of roast beef for a bulk rate price of $39.20. How much does the grocer pay per pound?

5. The grocer from Exercise 4 sells roast beef for $3.09 per pound. Ms. Smith has a coupon for $0.75 off her total. She purchases 1.52 pounds of roast beef. How much is her bill after the coupon?

6. A hiking guide recommends using a backpack that weighs no more than 25 pounds. Karin and Sarah each plan on taking a backpack on their hike. The table shows the weights of the items that they want to take.

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 liter of water</td>
<td>2.2 pounds</td>
</tr>
<tr>
<td>Dry socks</td>
<td>0.14 pound</td>
</tr>
<tr>
<td>Trail mix</td>
<td>0.75 pound</td>
</tr>
<tr>
<td>Fresh fruit</td>
<td>0.6 pound</td>
</tr>
<tr>
<td>Rain jacket</td>
<td>1.1 pounds</td>
</tr>
<tr>
<td>Backpack</td>
<td>1.7 pounds</td>
</tr>
</tbody>
</table>

Karin and Sarah each plan on packing 3 liters of water and one of each other item in her backpack for a 1-day hike. What is the total weight of one backpack?
7. Ava has $20 gift card to spend at an online store. The table shows the prices of the digital downloads that are available.

<table>
<thead>
<tr>
<th>Downloads</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Song</td>
<td>$0.89</td>
</tr>
<tr>
<td>Music Album</td>
<td>$10.49</td>
</tr>
<tr>
<td>Game</td>
<td>$2.89</td>
</tr>
<tr>
<td>Ring-tone</td>
<td>$0.49</td>
</tr>
</tbody>
</table>

a. How many games could Ava purchase with the gift card?

b. Ava decides to buy 1 music album and spend the rest on games. How many games could Ava buy? How much money would be left on the gift card?

c. The music album Ava decides to buy has 12 songs. Is it cheaper to buy the music album or the 12 songs as singles? What is the difference in cost?
8. The table shows the prices for four types of granola.

<table>
<thead>
<tr>
<th>Type</th>
<th>Weight</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triple Berry</td>
<td>16 oz</td>
<td>$5.99</td>
</tr>
<tr>
<td>Chocolate Cherry</td>
<td>24 oz</td>
<td>$8.25</td>
</tr>
<tr>
<td>Honey Pecan</td>
<td>12 oz</td>
<td>$4.49</td>
</tr>
<tr>
<td>Seeds and Oats</td>
<td>10 oz</td>
<td>$3.99</td>
</tr>
</tbody>
</table>

a. Which granola is the least expensive per ounce? Most expensive per ounce? Explain.

b. How much would 32 ounces of each granola cost?

c. How much of each granola could be purchased with $10.00? Round to the nearest ounce.

d. Jamie mixes 16 ounces of Triple Berry granola with 10 ounces of Seed and Oats. What is the unit rate of mixture?
9. The table shows the distances and winning times of a sprint triathlon.

<table>
<thead>
<tr>
<th>Event</th>
<th>Distance</th>
<th>Winner</th>
<th>2nd place</th>
<th>3rd place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swim</td>
<td>0.750 kilometer</td>
<td>10.3 minutes</td>
<td>10.2 minutes</td>
<td>11.1 minutes</td>
</tr>
<tr>
<td>Bike</td>
<td>20 kilometer</td>
<td>33.2 minutes</td>
<td>34.2 minutes</td>
<td>34.0 minutes</td>
</tr>
<tr>
<td>Run</td>
<td>5 kilometer</td>
<td>19.1 minutes</td>
<td>19.5 minutes</td>
<td>20.1 minutes</td>
</tr>
</tbody>
</table>

a. What was the winner's total time?

b. By how many minutes did the winner finish before the person in second place?

c. To the nearest thousandth of a kilometer per minute, how much faster was the swimming speed of the second-place finisher than the third-place finisher?

d. How much faster was the bike speed of the third-place finisher than her swimming speed? than her running speed?
10. The table shows the populations and land areas of four towns. Population density is the ratio of population to land area. Find the population density for each town. Round to the nearest tenth.

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
<th>Land Area (square miles)</th>
<th>Population Density (people per square mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robins</td>
<td>3,345</td>
<td>5.8</td>
<td>5.8</td>
</tr>
<tr>
<td>Highview</td>
<td>7,145</td>
<td>4.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Parkville</td>
<td>1,041</td>
<td>9.8</td>
<td>1.1</td>
</tr>
<tr>
<td>Vernon</td>
<td>4,583</td>
<td>3.5</td>
<td>1.3</td>
</tr>
</tbody>
</table>

11. The table shows the numbers of files and folder sizes for three folders on a computer.

   a. Find the average size for each type of file. Round to the nearest thousandth.

<table>
<thead>
<tr>
<th>Folder Name</th>
<th>Number of Files</th>
<th>Total Folder Size (gigabytes)</th>
<th>Average File Size (gigabytes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pictures</td>
<td>1,458</td>
<td>14.64</td>
<td>14.64</td>
</tr>
<tr>
<td>Music</td>
<td>230</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Movies</td>
<td>22</td>
<td>3.08</td>
<td>3.08</td>
</tr>
</tbody>
</table>

   b. How many times greater is the average file size for a movie file compared to a music file?

   c. Rosa has 2,105 music files in a folder on her computer. What would you estimate the folder size in gigabytes to be? Explain your reasoning.

   d. A folder with pictures is 2.75 gigabytes. About how many files would you expect to find in the folder? Explain your reasoning.
12. Katina walks 2.5 miles each morning. Eddy walks 3.1 miles each evening. Circle the numbers that make each statement true.

   a. Katina walks ___ miles after 5 days.
      [2.5]
      [7.5]
      [12.5]
      [15.5]

   b. After 5 days, Eddy walks about ___ miles more than Katina.
      [0.5]
      [2.5]
      [5.5]

13. Erin bought four types of cheeses from a farmer’s market. The table shows the type, weight, and cost of the cheese.

<table>
<thead>
<tr>
<th>Type</th>
<th>Weight</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>American</td>
<td>3 pounds</td>
<td>$12.87</td>
</tr>
<tr>
<td>Cheddar</td>
<td>2 pounds</td>
<td>$10.58</td>
</tr>
<tr>
<td>Muenster</td>
<td>1.5 pounds</td>
<td>$5.28</td>
</tr>
<tr>
<td>Swiss</td>
<td>4 pounds</td>
<td>$17.16</td>
</tr>
</tbody>
</table>

Which types of cheese cost a little more than $4 per pound? Select all that apply.
- American
- Cheddar
- Muenster
- Swiss

14. Using only the numbers and symbols on the tiles provided below, fill in each space to write an expression that can be used to solve each problem.

   a. Julia, Tomas, and Lyn want to buy their friend a birthday present. Julia has $8.42, Tomas has $3.54, and Lyn has $6.51. How much money do they have altogether to purchase a present?

   b. Kai’s puppy, Shadow, received 3 vaccines at his first veterinarian appointment. One of the vaccines cost $10.25 and the other two cost $8.49 each. How much do the vaccines cost in all?
Skill: Unit Rates

Determine the unit rates represented by each situation.

1. Zephra ran 2 miles in 0.25 hour.

2. It takes Toni 20 minutes to drive 5.2 miles to school.

3. A 2.5-pound bag of apples is priced at $5.59.

4. The curtain rod advertised has a length of 48 inches or 122 centimeters.

5. The bank exchanged 10 U.S. dollars for 8.84 euro.

6. Branson earned $61.33 for 5.5 hours of work.

7. The border on 3.5 scarves used 115.5 inches of ribbon.

8. The car traveled 311.6 miles on 19.0 gallons of gas.
Skill: Unit Rates (continued)

Use each unit rate to find a missing value.

9. There are about 1.6 kilometers per mile.
   a. How many kilometers are there in 60 miles?
   b. How many miles are there in 90.8 kilometers?

10. The price of a 1-square-foot tile is $4.89.
    a. How much do 112 tiles cost?
    b. How many tiles could be purchased for $500?
Skill: Unit Rates (continued)

11. The store multiplies its cost by 3.1 to determine the price of items.
   a. How much would the store charge for an item for which it paid $24.50?
   b. The price of an item at the store is $49.99. How much did the store pay for the item?

12. A smoothie recipe calls for 0.75 cup of berries for every 1 cup of yogurt and 1 cup of ice.
   a. How many cups of berries are needed for a 0.75-cup container of yogurt?
   b. There are 2.5 cups of berries. How much yogurt and ice is needed to make a smoothie using all the berries?
Additional Practice

1. James used a calculator to complete each computation. He forgot to write the decimal point in each answer. Write the correct answer for each computation.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Answer Without Decimal Point</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.7 + 6.09 + 4.2</td>
<td>1599</td>
<td></td>
</tr>
<tr>
<td>3.007 – 2.9 + 35.054</td>
<td>35161</td>
<td></td>
</tr>
<tr>
<td>14.5 – 8.07 – 6.2</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>

2. Students used a computer program to test the time it took them to react to a green ball that appeared on a computer screen. Here are the reaction times for two students, a girl with initials LG and a boy with initials MC.

LG’s data values:

<table>
<thead>
<tr>
<th>Trial 1</th>
<th>Trial 2</th>
<th>Trial 3</th>
<th>Trial 4</th>
<th>Trial 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.08 sec</td>
<td>0.94 sec</td>
<td>0.64 sec</td>
<td>1.00 sec</td>
<td>0.94 sec</td>
</tr>
</tbody>
</table>

MC’s data values:

<table>
<thead>
<tr>
<th>Trial 1</th>
<th>Trial 2</th>
<th>Trial 3</th>
<th>Trial 4</th>
<th>Trial 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25 sec</td>
<td>2.48 sec</td>
<td>1.15 sec</td>
<td>1.34 sec</td>
<td>1.47 sec</td>
</tr>
</tbody>
</table>

da. Compute the difference in LG’s and MC’s data values for each trial.

b. Find the sum of LG’s data values.

c. Find the sum of MC’s data values.

d. What are some statements you can make to compare the data from each of the two students?
Find the value of \( n \) that makes each sentence true. Then write the addition and subtraction fact family for the sentence.

3. \( 2.3 + 4.09 = n \)  
4. \( 1.009 + 12.87 = n \)

5. \( 19.81 - 12.25 = n \)  
6. \( 13.7 - 10.34 = n \)

7. \( n + 3.8 = 12.65 \)  
8. \( n - 2.4 = 5 \)
Find the value of \( n \) that makes each sentence true. Then write the addition and subtraction fact family for the sentence.

9. \( n + 8.4 = 15 \)  
10. \( n - 7.62 = 1.4 \)

11. \( 1.6 + n = 7.65 \)  
12. \( 17.18 - n = 4.32 \)
13. Which in the fact family for \(2.3 - n = 1.5\)?

Select all that apply.

- \(2.3 = 1.5 + n\)
- \(2.3 + n = 1.5\)
- \(n - 2.3 = 1.5\)
- \(2.3 = n + 1.5\)
- \(1.5 - n = 2.3\)

14. Circle the number that makes each statement true.

\[
\begin{align*}
\text{a. } 15.5 + & \quad 5.73 \quad = 21.23 \\
& \quad 15.23 \\
& \quad 37.73 \\
\text{b. } 2.3 + 12.64 + 8.281 \quad = & \quad 23.221
\end{align*}
\]

15. Shade and label the circles to show the correct location of each decimal on the number line.

1.3  1.08  1.75  1.5  1.11  1.89

1.0  2.0

16. Order the decimals from smallest to largest.

\[
\begin{align*}
4.3 & \quad 4.303 \quad 4.03 \\
4.33 & \quad 4.033 \quad 4.003
\end{align*}
\]
First estimate. Then find each sum or difference.

1. $0.6 + 5.8$
2. $2.1 + 3.4$
3. $3.4 - 0.972$

4. $3.1 - 2.076$
5. $8.13 - 2.716$
6. $5.91 + 2.38$

7. $3.086 + 6.152$
8. $4.7 - 1.9$
9. $9.3 - 3.9$

10. $5.2 - 1.86$
11. $15.98 + 26.37$
12. $9.27 + 15.006$

13. $5.9 - 2.803$
14. $15.7 - 8.923$
15. $4.19 - 2.016$

16. $14.75 - 6.9264$
17. $5.1 + 4.83 + 9.002$
18. $3 + 4.02 + 8.6$
Skill: Adding and Subtracting Decimals (continued)

Order each set of decimals on a number line.
19. 0.2, 0.6, 0.5  
20. 0.26, 0.3, 0.5, 0.59, 0.7

Use the table at the right for Exercise 21–23.
21. Find the sum of the decimals given in the chart. What is the meaning of this sum?

22. What part of the hourly work force is age 25–44?

23. Which three age groups combined represent about one-fourth of the hourly work force?

Find the missing numbers.
24. 12.84 + 30.123 = 43.967
25. \( n - 23.572 = 41.617 \)
26. \( n - 16.321 = 20.2 \)
27. \( 3.02 + n - 6.1 = 12.74 \)
1. Josh and his father are estimating how much gas they will need for a car trip. They know that the car gets 39 miles per gallon. Estimate how many gallons of gas they will need for a trip of 778 miles. Explain your reasoning.

2. The diagram below shows a rectangular plot of land cut into squares of 2.65 acres each.

   ![Diagram of a rectangular plot of land cut into squares]

   a. What is the acreage of the shaded region?
   b. What is the acreage of the unshaded region?
   c. In this area, land sells for $2,475 per acre.
      i. What would the price of the shaded region be?
      ii. What would the price of the unshaded region be?
   d. In this area, owners pay property taxes of $13.50 per thousand dollars of property value. What is the total annual property tax for the shaded and unshaded regions combined? Show your work.

3. Use the number sentence $123 \times 4 = 492$ to help you solve the following:
   a. $12.3 \times 4$
   b. $1.23 \times 4$
   c. $0.123 \times 4$
   d. $0.123 \times 40$
   e. $0.123 \times 400$
   f. $0.123 \times 4000$
4. Use the number sentence $63 \times 501 = 31,563$ to help you solve the following:
   a. $6.3 \times 5.01$  
   b. $6.3 \times 0.501$  
   c. $6.3 \times 50.1$
   d. $0.63 \times 5.01$  
   e. $0.63 \times 501$  
   f. $0.63 \times 0.501$

5. Estimate each product. Explain.
   a. $2.4 \times 0.8$  
   b. $5.21 \times 1.1$  
   c. $1.29 \times 8$

6. For (a)–(c) in Exercise 5 above, find the product. Show your work.

7. Compute each product. What patterns do you notice?
   a. $5.5 \times 9.9$  
   b. $5.5 \times 9.99$  
   c. $5.5 \times 9.999$  
   d. $5.5 \times 9.9999$
8. Jason and his mother are re-tiling the kitchen floor. The area of the kitchen floor is 96.75 square feet. Each tile has an area of 1.25 square feet. How many tiles will Jason and his mother need to tile the kitchen?

9. The student concession stand buys 6.5 pounds of unpopped popcorn for $12.75. What is the price per pound of the popcorn?

10. For each of the following, decide if the quotient is less than 1 or greater than 1.
    a. $9.22 ÷ 2.8$
    b. $0.9 ÷ 0.3$
    c. $12.6 ÷ 11.8$
    d. $5.6 ÷ 9.9$

11. Compute each quotient. What patterns do you notice?
    a. $6.3 ÷ 9, 6.3 ÷ 0.9, 6.3 ÷ 0.09, 6.3 ÷ 0.009$
    b. $6.3 ÷ 9, 0.63 ÷ 9, 0.063 ÷ 9, 0.0063 ÷ 9$
    c. $6.3 ÷ 9, 0.63 ÷ 0.9, 0.063 ÷ 0.09, 0.0063 ÷ 0.009$
12. Use the number sentence $936 \div 12 = 78$ to help you solve the following:
   a. $936 \div 1.2$
   b. $93.6 \div 12$
   c. $9.36 \div 12$
   d. $0.936 \div 12$
   e. $936 \div 0.12$
   f. $936 \div 0.012$

13. Use the number sentence $492 \div 4 = 123$ to help you solve the following:
   a. $492 \div 40$
   b. $492 \div 400$
   c. $492 \div 4000$
   d. $49.2 \div 4$
   e. $4.92 \div 4$
   f. $0.492 \div 4$

14. Find each quotient.
   a. $4.5 \div 0.3$
   b. $64.4 \div 0.04$
   c. $12.9 \div 20$
   d. $12.9 \div 0.2$
   e. $1.05 \div 2.1$
   f. $18.8 \div 4$
### Investigation 3

**Decimal Operations**

15. Place a decimal point in the appropriate place in the product.
   a. $0.64 \times 0.2 = \boxed{0.128}$
   b. $1.06 \times 10.4 = \boxed{11.1024}$
   c. $3.54 \div 0.006 = \boxed{590}$

16. Circle the number that makes the statement true.
   a. $4.32 \div 1.8 = \begin{array} \hline 0.42 \\ 2.4 \\ \hline \end{array}$
   b. $0.64 \times 1.25 = \begin{array} \hline 0.512 \\ 0.61 \\ \hline \end{array}$
   c. $2.1 \times 0.55 = \begin{array} \hline 0.26 \\ 1.155 \\ \hline \end{array}$

17. Write each expression in the appropriate box.
   
   $3.25 \div 2.78 \quad 2.81 \div 3.4 \quad 5.1 \div 5.01 \quad 1.25 \div 4.1 \quad 5.2 \div 5.72$

**Quotient Greater than 1**

**Quotient Less than 1**
Skill: Multiplying Decimals

Place the decimal point in each product.
1. $4.3 \times 2.9 = 12.47$
2. $0.279 \times 53 = 14.787$
3. $5.90 \times 6.3 = 37.17$

Find each product.
4. $43.59 \times 0.1$
5. $246 \times 0.01$
6. $726 \times 0.1$

7. $5.342 \times 13$
8. $0.19 \times 0.05$
9. $6.4 \times 0.09$

10. $240 \times 0.02$
11. $43.79 \times 42$
12. $0.72 \times 0.43$
Use mental math to find each product.

13. $5.97 \times 100$
14. $4 \times 0.2 \times 5$
15. $3 \times (0.8 \times 1)$

16. $5.23 \times 100$
17. $0.38 \cdot 1,000$
18. $(5)(4.2) \times 10$

Write a number sentence you could use for each situation.

19. A pen costs $0.59. How much would a dozen pens cost?

20. A mint costs $0.02. How much would a roll of 10 mints cost?

21. A bottle of juice has a deposit of $0.10 on the bottle. How much deposit money would there be on 8 bottles?

22. An orange costs $0.09. How much would 2 dozen oranges cost?

Use <, =, or > to complete each statement.

23. $2.8 \times 10 \square 26 \cdot 100$
24. $38.6 \cdot 10 \square 2 \cdot 38.6 \cdot 5$

25. $3.1 \times 10 \square (0.5 \cdot 0.2)3.1$
26. $8.3 \cdot 10 \cdot 1 \square 8.3 \times 100$
** Skill: Dividing Decimals **

**Decimal Operations**

**Use mental math to find each quotient.**

1. $7.8 \div 10$
2. $8.91 \div 100$
3. $10)46.3$
4. $0.6 \div 10$
5. $1.45 \div 10$
6. $62.3 \div 100$

**Find each quotient.**

7. $0.4 \div 0.02$
8. $3.9 \div 0.05$
9. $0.2 \div 26$
10. $0.4 \div 1.08$
11. $0.68 \div 0.2$
12. $0.02 \div 0.06$
13. $14 \div 89$
14. $0.09 \div 0.108$
15. $0.04 \div 0.024$

**Use <, =, or > to complete each statement.**

16. $56 \div 100 \square 5.6 \div 100$
17. $16.20 \div 10 \square 162.00 \div 100$
Skill: Dividing Decimals (continued)

Find each quotient.

18. \(1.8 ÷ 6\) 
19. \(16 ÷ 3.2\) 
20. \(17 ÷ 5.1\) 

21. \(9 ÷ 21.6\) 
22. \(15 ÷ 123\) 
23. \(108 ÷ 5\) 

24. \(50 ÷ 17.5\) 
25. \(24 ÷ 120.06\) 
26. \(9 ÷ 11.24\)
Solve.

27. A package of 25 mechanical pencils costs $5.75. How much does each pencil cost?

28. A sales clerk is placing books side by side on a shelf. She has 12 copies of the same book. If the books cover 27.6 inches of the shelf, how thick is each book?

29. The salt content in the Caspian Sea is 0.13 kilograms for every liter of water. How many kilograms of salt are in 70 liters?

Find each quotient. Identify each as a terminating or repeating decimal.

30. \(2.5 \div 0.08\)  
31. \(9.6 \div 0.5\)  
32. \(0.25 \div 0.03\)
1. For each item below find:
   • the sales tax and
   • the total cost of each item.
   
   a. an $18 pair of gloves if the sales tax rate is 6.5%
   
   b. $65 in party supplies if the sales tax rate is 8%
   
   c. a $42 pair of shoes if the sales tax rate is 7.5%
   
   d. a $0.75 apple if the sales tax rate is 7%
2. Write and solve problems that could be represented by each percent bar below.

**a.**

<table>
<thead>
<tr>
<th>0%</th>
<th>?</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>30%</td>
<td>84</td>
</tr>
</tbody>
</table>

**b.**

<table>
<thead>
<tr>
<th>0%</th>
<th>?</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10%</td>
<td>4.14</td>
</tr>
<tr>
<td>27.60</td>
<td></td>
<td>31.74</td>
</tr>
</tbody>
</table>

**c.**

<table>
<thead>
<tr>
<th>0%</th>
<th>10%</th>
<th>120%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10%</td>
<td>35.60</td>
</tr>
</tbody>
</table>

"Decimal Operations"
3. Last Saturday, Aaron had lunch at a fast-food restaurant. He ordered the lunch special for $3.29. If sales tax is 6%, how much did Aaron pay for the lunch special?

4. Skateboards are on sale at Susan’s Skateshop for 30% off.
   a. Express the discount as a fraction.
   b. If the regular price of a skateboard is $89, what is the discounted price?
   c. What is the total cost of the discounted skateboard in part (b) if sales tax is 4.5%?

5. Ms. Miller is charged $86 to get her hair cut and highlighted. If she wants to give the stylist a 15% tip, what is her total cost with tip?

6. Jacque and his three friends go out for dinner. They have a coupon for a 25% discount. The bill before the discount is $127.80.
   a. What is the discounted cost of the meals?
   b. After adding a 15% tip to the discounted cost, they divide the total equally. How much should each person pay? Round to the nearest cent.
Investigation 4

7. a. Shade the bar to represent 45% of 20.

[Diagram of a bar divided into 10 equal parts, with 9 parts shaded and labeled 0.45 or 45% and the numbers 0 and 20 on either side of the bar.]

b. Shade the bar to represent 60% of 45.

[Diagram of a bar divided into 10 equal parts, with 6 parts shaded and labeled 0.6 or 60% and the numbers 0 and 45 on either side of the bar.]

8. The cost of a shirt is $16 and the shirt is 20% off. The tax rate is 5%. Circle the correct answer.

a. The price after the discount is ________________.

- $12.80
- $13.44
- $15.20
- $16.80
- $19.20

b. The price after tax is ________________.

- $12.80
- $13.44
- $16.25
- $19.20
- $20.00

9. Using only the numbers and symbols on the tiles provided below, fill in each box to write an expression.

Sally wrote an expression to find the total cost of a computer with a price of $450 and a tax rate of 7.5%. What could the expression have been?

[Diagram of a bar with numbers and symbols: 450, 0.075, +, -, ×, ÷.]

- [Blank boxes for numbers: 450, 0.075, +, -, 450, 0.075, +, -, 450]
Skill: Using Percents

Solve by writing an equation.

1. Mr. Andropolis wants to leave the server a 12% tip. Estimate the tip he should leave if the family’s bill is $32.46.

2. Michael buys a pair of jeans that regularly costs $62. The jeans were discounted by 80%. Estimate the discounted price of the jeans.

3. Estimate the sales tax and final cost of a book that costs $12.95 with a sales tax of 6%.

4. A real estate agent receives a 9% commission for every house sold. Suppose she sold a house for $212,000. Estimate her commission.
5. A jacket costs $94.95. It is on sale for 30% off. Estimate the sale price.

6. A restaurant offers a 13% discount on chicken wings on Mondays. On Friday, Travis eats $7.95 worth of chicken wings. How much would those wings cost on Monday?

7. Ian went out to dinner last night and remembers leaving a $6.50 tip. The tip was 20% of the cost of dinner. What was the cost of dinner before tip?

8. A store is selling a sweater on sale for $17.90. The regular price is $22.95. What percent of the regular price is the sale price?
Investigation 4

Skill: Using Percents (continued)

Find each amount.
9. 40% of 70
10. 25% of 80
11. 50% of 80
12. 40% of 200
13. 5% of 80
14. 75% of 200
15. 14% of 120
16. 30% of 180
17. 62.5% of 24

Solve.
18. A farmer raised a watermelon that weighed 20 pounds. From his experience with raising watermelons, he estimated that 95% of the watermelon’s weight is water.
   a. In pounds, how much of the watermelon is water?
   b. In pounds, how much of the watermelon is not water?
   c. The watermelon was shipped off to market. There it sat, until it had dehydrated (lost water). If the watermelon is still 90% water by weight, what percent of it is not water?
19. A bicycle goes on sale at 75% of its original price of $160. What is its sale price?