Write $>$ or $<$ to make each statement true.

1. $\frac{3}{5} < \frac{4}{5}$
2. $\frac{6}{10} > \frac{5}{10}$
3. $\frac{4}{10} > \frac{4}{12}$
4. $\frac{3}{5} < \frac{4}{5}$
5. $\frac{3}{6} > \frac{3}{8}$
6. $\frac{7}{100} < \frac{8}{100}$

Solve. Explain your answers.

7. Juan took $\frac{2}{12}$ of the fruit salad and Harry took $\frac{3}{12}$ of the same salad. Who took more of the salad?
   Harry took more. The denominators are the same so you can compare the numerators. 3 is greater than 2, so Harry took more salad.

8. Kim drank $\frac{1}{3}$ of a carton of milk. Joan drank $\frac{1}{4}$ of a carton. Who drank more?
   Kim drank more. $\frac{1}{4}$ is less than $\frac{1}{3}$ because the whole is divided into more pieces.

9. Maria read $\frac{3}{8}$ of a story. Darren read $\frac{3}{6}$ of the same story. Who read more of the story?
   Darren read more. The numerators are the same so you can compare the denominators. 6 is less than 8, so Darren read more.

10. Write 2 things you learned today about comparing fractions.
    Answers will vary.

11. Write and solve a fraction word problem of your own.
    Answers will vary.
Divide.

1. \( \frac{45}{6273} \)
2. \( \frac{967}{1,935} \)
3. \( \frac{116}{7812} \)

Write = or ≠ to make each statement true.

4. \( 16 - 4 \neq 2 \)
5. \( 20 + 8 = 30 - 2 \)
6. \( 9 - 4 \neq 12 \)
7. \( 48 = 24 + 24 \)
8. \( 50 + 3 + 8 \neq 71 \)
9. \( 13 + 15 = 15 + 13 \)

Solve each equation.

10. \( 18 \div s = 9 \)
    \( s = \frac{2}{1} \)
11. \( m = 8 \times 4 \)
    \( m = \frac{32}{1} \)
12. \( p \div 10 = 7 \)
    \( p = \frac{70}{1} \)
13. \( t \times 12 = 60 \)
    \( t = \frac{5}{1} \)
14. \( 3 \times y = 18 \)
    \( y = \frac{6}{1} \)
15. \( j = 42 \div 6 \)
    \( j = \frac{7}{1} \)

16. **Stretch Your Thinking** Ellen, Fern, and Kyle are all drinking milk from the same size cartons in the cafeteria. Ellen’s carton is \( \frac{3}{7} \) full. Fern’s carton is \( \frac{3}{10} \) full. Kyle’s carton is \( \frac{3}{4} \) full. Who has the least milk left in their carton? Explain how you know.

Fern; I compared the fractions to find whose carton was the least full. Since the fractions all have the same numerator, I looked at the denominators. Since 10 is the greatest of the three denominators, I know \( \frac{3}{10} \) is the least of the three fractions. Fern’s carton is the least full.
1. Use the number line to compare the fractions or mixed numbers. Write > or < to make the statement true.

   a. \( \frac{3}{4} > \frac{5}{8} \)  
   b. \( 1\frac{1}{4} < \frac{3}{2} \)  
   c. \( \frac{9}{4} < 2\frac{1}{2} \)  
   d. \( \frac{7}{2} > \frac{17}{8} \)  

   e. \( 4\frac{2}{4} < 4\frac{5}{8} \)  
   f. \( 4\frac{1}{2} > \frac{33}{8} \)  
   g. \( 1\frac{3}{4} < 1\frac{7}{8} \)  
   h. \( 1\frac{1}{2} > 1\frac{1}{8} \)

2. Mark and label the letter of each fraction or mixed number on the number line.

   a. \( \frac{3}{8} \)  
   b. \( \frac{3}{4} \)  
   c. \( 1\frac{1}{2} \)  
   d. \( 2\frac{1}{8} \)  
   e. \( 2\frac{7}{8} \)

   f. \( 3\frac{1}{4} \)  
   g. \( 3\frac{5}{8} \)  
   h. \( 4\frac{2}{4} \)  
   i. \( 4\frac{6}{8} \)  
   j. \( 4\frac{7}{8} \)

The list below shows the amount of fruit purchased from the market.

<table>
<thead>
<tr>
<th>Fruit Purchases (lb = pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>apples 2( \frac{1}{8} ) lb</td>
</tr>
<tr>
<td>grapes 2( \frac{2}{3} ) lb</td>
</tr>
</tbody>
</table>

3. Decide if each weight is closer to 2 pounds, 2\( \frac{1}{2} \) pounds, or 3 pounds. Write closer to 2 pounds, closer to 2\( \frac{1}{2} \) pounds, or closer to 3 pounds.

   a. apples       closer to 2 lb 
   b. bananas     closer to 2\( \frac{1}{2} \) lb 
   c. grapes      closer to 2\( \frac{1}{2} \) lb 
   d. oranges     closer to 3 lb

4. Which purchase had a greater weight?

   a. apples or grapes grapes 
   b. oranges or bananas oranges

UNIT 7 LESSON 2
Solve, using any method.

1. \( \frac{152}{8} \div 1,219 \)
2. \( 2,383 \div 3 \)
3. \( 4,038 \div 4 \)

Solve each comparison problem.

4. Mateo read 2,382 pages in a book series over the summer. This is 3 times the number of pages as his younger brother read over the summer. How many pages did Mateo’s brother read over the summer?
   \( p \times 3 = 2,382 \), or \( 2,382 \div 3 = p \); \( p = 794 \); 794 pages

5. In Jen’s town, there was 9 inches of snow in a year. In her cousin’s town, there was 216 inches of snow in the same year. How many times the number of inches of snow was there in the cousin’s town as in Jen’s town?
   \( 9 \times s = 216 \), or \( 216 \div 9 = s \); \( s = 24 \); 24 times as many inches

Write < or > to make each statement true.

6. \( \frac{2}{5} < \frac{4}{5} \)
7. \( \frac{1}{3} < \frac{3}{8} \)
8. \( \frac{4}{5} > \frac{4}{6} \)

9. Stretch Your Thinking Dakota says the point on the number line shown here is \( \frac{4}{5} \). His teacher says that he is reading the number line incorrectly. What is Dakota’s error? What is the correct fraction?

Dakota has an incorrect denominator. He may have counted the number of lines between 0 and 1, which is 5, instead of counting the spaces that the line is divided into, which is 6. The correct fraction is \( \frac{4}{6} \).
1. Draw a small square, a medium square, and a large square. Shade \( \frac{1}{6} \) of each. **Drawings will vary.**

2. Draw a small circle, a medium circle, and a large circle. Shade \( \frac{3}{4} \) of each. **Drawings will vary.**

3. Draw a short rectangle, a medium rectangle, and a long rectangle. Shade \( \frac{3}{5} \) of each. **Drawings will vary.**

4. Look at the different size shapes you shaded in Problems 1–3. Describe what they show about fractions of different wholes.
   Answers will vary. Possible answer: A fractional part of a larger whole is larger than the same fractional part of a smaller whole.

---

**Solve.**

5. Kris ate \( \frac{3}{8} \) of a pizza and Kim ate \( \frac{4}{8} \) of the same pizza. Did they eat the whole pizza? Explain. \( \frac{3}{8} + \frac{4}{8} = \frac{7}{8}; \frac{7}{8} < 1; \) They did not eat the whole pizza.

6. Amena ate \( \frac{1}{2} \) of a sandwich. Lavonne ate \( \frac{1}{2} \) of a different sandwich. Amena said they ate the same amount. Lavonne said Amena ate more. Could Lavonne be correct? Explain your thinking.
   Lavonne could be correct. If Amena’s sandwich was larger than Lavonne’s, then \( \frac{1}{2} \) of Amena’s sandwich would be larger than \( \frac{1}{2} \) of Lavonne’s sandwich.
Add or subtract.

1. \[8,159 + 2,713 = 10,872\]
2. \[54,992 + 8,317 = 63,309\]
3. \[625,000 - 139,256 = 485,744\]

Use an equation to solve.

4. Chad harvested 39 potatoes from his garden. He kept 11 for himself and shared the remaining potatoes evenly among his 4 neighbors. How many potatoes did each neighbor get?
   \[(39 - 11) ÷ 4 = p; p = 7; 7\] potatoes

5. Mark and label the point for each fraction or mixed number with its letter.
   
   a. \(3\frac{1}{8}\)
   b. \(1\frac{2}{4}\)
   c. \(\frac{3}{4}\)
   d. \(4\frac{7}{8}\)
   e. \(2\frac{1}{8}\)
   f. \(\frac{5}{8}\)
   g. \(2\frac{1}{4}\)
   h. \(1\frac{3}{8}\)
   i. \(3\frac{6}{8}\)
   j. \(4\frac{1}{2}\)

6. Stretch Your Thinking Raylene made a bracelet with 28 beads. She also made a necklace with twice the number of beads as the bracelet. If \(\frac{1}{2}\) of the beads on the bracelet are green and \(\frac{1}{4}\) of the beads on the necklace are green, does the bracelet, the necklace, or neither have more green beads? Explain.
   neither; Since \(\frac{1}{2}\) is twice the portion of a whole as \(\frac{1}{4}\), and the total beads in the bracelet is half as many as in the necklace, the number of green beads in each must be the same.
Use the fraction strips to show how each pair is equivalent.

1. \(\frac{1}{3}\) and \(\frac{2}{6}\)

\[
\frac{1}{3} = \frac{1 \times 2}{3 \times 2} = \frac{2}{6}
\]

2. \(\frac{3}{4}\) and \(\frac{9}{12}\)

\[
\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}
\]

3. \(\frac{2}{5}\) and \(\frac{4}{10}\)

\[
\frac{2}{5} = \frac{2 \times 2}{5 \times 2} = \frac{4}{10}
\]

4. \(\frac{2}{4}\) and \(\frac{6}{12}\)

\[
\frac{2}{4} = \frac{2 \times 3}{4 \times 3} = \frac{6}{12}
\]

Complete to show how the fractions are equivalent.

5. \(\frac{5}{6}\) and \(\frac{35}{42}\)

\[
\frac{5}{6} = \frac{5 \times 7}{6 \times 7} = \frac{35}{42}
\]

6. \(\frac{4}{10}\) and \(\frac{40}{100}\)

\[
\frac{4}{10} = \frac{4 \times 10}{10 \times 10} = \frac{40}{100}
\]

Complete.

7. \(\frac{4}{5}\) and \(\frac{9}{45}\)

\[
\frac{4}{5} = \frac{4 \times 9}{5 \times 9} = \frac{36}{45}
\]

8. \(\frac{2}{5}\) and \(\frac{8}{40}\)

\[
\frac{2}{5} = \frac{2 \times 8}{5 \times 8} = \frac{16}{40}
\]

9. \(\frac{3}{8}\) and \(\frac{6}{48}\)

\[
\frac{3}{8} = \frac{3 \times 6}{8 \times 6} = \frac{18}{48}
\]
Solve. Then explain the meaning of the remainder.

1. Doris is putting together gift bags. She has 53 favors to divide evenly among gift bags for 7 guests. How many favors will each guest get?

\[ 53 \div 7 = 7 R4; \text{ Each guest gets 7 favors. The remainder means there will be 4 favors left over that don’t go in the gift bags.} \]

Solve each problem.

2. \[ 2 \times 9 + 5 = r \]
   \[ 18 + 5 = 23 \]

3. \[ 36 \div (20 - 8) = t \]
   \[ 36 \div 12 = 3 \]

Solve.

4. Mattie and Leah each bought an ice cream cone for the same price. Mattie said it cost her \( \frac{2}{3} \) of her allowance. Leah said it cost her \( \frac{1}{3} \) of her allowance. Who gets more allowance? Explain.

   Leah; If two-thirds of Mattie’s allowance is the same as only one-third of Leah’s allowance, then Leah’s allowance must be greater.

5. **Stretch Your Thinking** Omar cuts a pizza into 4 slices and takes 3 of the slices. He says that he would have the same amount of pizza if he cut the pizza into 8 slices and takes 6 of the slices. Paul says he can cut the pizza into 16 slices and take 12 slices to have the same amount. Who is correct? Explain.

   They are both correct; Possible answer: Omar says that \( \frac{3}{4} = \frac{6}{8} \), which is true. 8 slices is twice as many as 4 slices, and having 6 slices is also twice as many as having 3 slices. Paul says that \( \frac{3}{4} = \frac{12}{16} \), which is true. 16 slices is 4 times as many as 4 slices, and having 12 slices is also 4 times as many as having 3 slices.
Shade the fraction bar to show the fraction of items sold. Group the unit fractions to form an equivalent fraction in simplest form. Show your work numerically.

1. The manager of Fantasy Flowers made 8 bouquets of wild flowers. By noon, she sold 2 of the bouquets. What fraction did she sell?

Group size: 2  Fraction of bouquets sold: \( \frac{2}{8} = \frac{1}{4} \)

2. A car dealer had 12 red cars on his lot at the beginning of the month. The first week he sold 8 of them. What fraction did he sell that week?

Group size: 4  Fraction of red cars sold: \( \frac{8}{12} = \frac{2}{3} \)

3. A music store received 10 copies of a new CD. They sold 6 of them in the first hour. What fraction did the store sell in the first hour?

Group size: 2  Fraction of CDs sold: \( \frac{6}{10} = \frac{3}{5} \)

Simplify each fraction. There are multiple solutions to Exercises 5–7. Possible answers are given.

4. \( \frac{8}{10} = \frac{4}{5} \)

5. \( \frac{6}{12} = \frac{3}{6} \)

6. \( \frac{25}{100} = \frac{5}{20} \)

7. \( \frac{4}{8} = \frac{1}{2} \)
Tell whether 4 is a factor of each number. Write yes or no.

1. 12
   yes
2. 20
   yes
3. 10
   no
4. 26
   no

Tell whether each number is a multiple of 3. Write yes or no.

5. 15
   yes
6. 32
   no
7. 27
   yes
8. 25
   no

Name the fraction for each sum of unit fractions.

9. \( \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{5}{8} \)
10. \( \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \frac{6}{12} \)
11. \( \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} = \frac{7}{9} \)

Complete.

12. \( \frac{3}{5} = \frac{3 \times \frac{7}{7}}{5} = \frac{21}{35} \)
13. \( \frac{2}{9} = \frac{2 \times \frac{4}{4}}{9} = \frac{8}{36} \)
14. \( \frac{5}{6} = \frac{5 \times \frac{3}{3}}{6} = \frac{15}{18} \)

Stretch Your Thinking  Explain two different ways to simplify \( \frac{6}{12} \).
Possible answer: divide the numerator and the denominator by 6 to simplify to \( \frac{1}{2} \), or divide the numerator and the denominator by 2 to get \( \frac{3}{6} \) and then divide the numerator and the denominator by 3 to simplify to \( \frac{1}{2} \).
1 Use the fraction strips to compare the fractions \( \frac{7}{12} \) and \( \frac{2}{3} \).

\[
\frac{7}{12} \quad \bigcirc \quad \frac{2}{3}
\]

<table>
<thead>
<tr>
<th>( \frac{1}{12} )</th>
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<td>( \frac{1}{3} )</td>
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</tr>
</tbody>
</table>

2 Use the number lines to compare the fractions \( \frac{5}{6} \) and \( \frac{2}{3} \).

\[
\frac{5}{6} \quad \bigcirc \quad \frac{2}{3}
\]

\[
\begin{array}{cccccccc}
0 & \frac{1}{6} & \frac{2}{6} & \frac{3}{6} & \frac{4}{6} & \frac{5}{6} & 1 \\
0 & \frac{1}{3} & \frac{2}{3} & & & & 1
\end{array}
\]

Compare. Write \( > \), \( < \), or \( = \).

3 \( \frac{1}{6} \quad \bigcirc \quad \frac{3}{5} \)

4 \( \frac{7}{8} \quad \bigcirc \quad \frac{3}{4} \)

5 \( \frac{1}{4} \quad \bigcirc \quad \frac{3}{10} \)

6 \( \frac{7}{10} \quad \bigcirc \quad \frac{5}{8} \)

7 \( \frac{2}{3} \quad \bigcirc \quad \frac{1}{2} \)

8 \( \frac{2}{5} \quad \bigcirc \quad \frac{7}{10} \)
Write a number sentence to answer each question.

1. How many meters are equal to 58 kilometers?
   \[ 58 \text{ km} \times 1,000 = 58,000 \text{ m} \]

2. How many millimeters are equal to 17 centimeters?
   \[ 17 \text{ cm} \times 10 = 170 \text{ mm} \]

Name the fraction that will complete each equation.

3. \[ 1 = \frac{4}{4} = \frac{1}{4} + \frac{3}{4} \]
4. \[ 1 = \frac{8}{8} = \frac{2}{8} + \frac{6}{8} \]
5. \[ 1 = \frac{6}{6} = \frac{1}{6} + \frac{5}{6} \]

Simplify each fraction.

6. \[ \frac{12}{15} \div \frac{3}{3} = \frac{4}{5} \]
7. \[ \frac{28}{36} \div \frac{4}{4} = \frac{7}{9} \]
8. \[ \frac{48}{56} \div \frac{8}{8} = \frac{6}{7} \]
9. \[ \frac{15}{40} \div \frac{5}{5} = \frac{3}{8} \]

10. **Stretch Your Thinking**  Kathleen, Penny, and Megan all order 12-ounce smoothies. After 5 minutes, Kathleen still has \( \frac{3}{4} \) left, Penny has \( \frac{5}{6} \) left, and Megan has \( \frac{5}{8} \) left. Who has the least amount of smoothie in their cup? Who has the greatest? Explain.

    Megan has the least and Penny has the most; I wrote equivalent fractions for all three fractions using the denominator 24: \( \frac{3 \times 6}{4 \times 6} = \frac{18}{24} \), \( \frac{5 \times 4}{6 \times 4} = \frac{20}{24} \), \( \frac{5 \times 3}{8 \times 3} = \frac{15}{24} \). Since the least numerator is 15, Megan has the least amount of smoothie left, and since the greatest numerator is 20, Penny has the greatest amount of smoothie left.
Tyler asked his classmates the distance in miles from their home to the school. The distances they named are shown in the table.

<table>
<thead>
<tr>
<th>Distance from Home to School (in miles)</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/8</td>
<td>5</td>
</tr>
<tr>
<td>3/8</td>
<td>3</td>
</tr>
<tr>
<td>4/8</td>
<td>4</td>
</tr>
<tr>
<td>5/8</td>
<td>5</td>
</tr>
<tr>
<td>6/8</td>
<td>3</td>
</tr>
<tr>
<td>7/8</td>
<td>7</td>
</tr>
</tbody>
</table>

1. Make a line plot of the data.

2. How many students did Tyler ask in all? Explain how you know.
   
   27; Counted the number of marks.

3. Find the difference between the greatest distance and the least distance.
   
   5/8 mile

4. Layla lives the least distance from the school. Her friend Geneva lives 3/8 mile from her. Geneva walked to Layla’s house. Then the two girls walked to school together. How far did Geneva walk altogether?
   
   5/8 mile
Complete.

1. How many liters are equal to 39 kiloliters? \(39,000 \text{ L}\)
2. How many milligrams are equal to 4 centigrams? \(40 \text{ mg}\)

Solve.

\[
\begin{align*}
3. \quad \frac{5}{9} + \frac{2}{9} &= \frac{7}{9} \\
4. \quad \frac{4}{6} - \frac{1}{6} &= \frac{3}{6} \\
5. \quad \frac{10}{11} - \frac{3}{11} &= \frac{7}{11}
\end{align*}
\]

Use a common denominator to compare the fractions.
Write \(<\), \(=\), or \(>\) to make a true statement.

\[
\begin{align*}
6. \quad \frac{9}{10} &> \frac{2}{3} \\
7. \quad \frac{5}{8} &> \frac{3}{5} \\
8. \quad \frac{2}{3} &< \frac{5}{6}
\end{align*}
\]

\[
\begin{align*}
9. \quad \frac{4}{14} &= \frac{2}{7} \\
10. \quad \frac{4}{5} &> \frac{4}{10} \\
11. \quad \frac{6}{8} &< \frac{5}{6}
\end{align*}
\]

12. **Stretch Your Thinking** Mr. Brady asked his students how long it took each of them to complete their homework from the previous night. He presented the results in the line plot shown. How many minutes did the greatest number of students take to do their homework? How many combined hours did those particular students spend on homework? Explain.

40 minutes; \(5\frac{1}{3}\) hours; The greatest number of marks on the plot shows that 8 students spent \(\frac{2}{3}\) hour each on homework. I made an equivalent fraction with denominator 60, \(\frac{2}{3} \times \frac{20}{20} = \frac{40}{60}\), to convert to 40 minutes; I figured the combined hours by multiplying \(\frac{2}{3}\) by 8, \(\frac{2}{3} \cdot 8 = \frac{16}{3} = 5\frac{1}{3}\), to get \(5\frac{1}{3}\) hours.
Use the visual to fill in each blank.

1. The shaded part of the whole represents:
   \[
   \frac{40}{100} = \text{ } \frac{40}{100} \text{ of } 100 \text{ equal parts and the decimal } 0.40.
   \]
   \[
   \frac{4}{10} = \text{ } \frac{4}{10} \text{ of } 10 \text{ equal parts and the decimal } 0.4.
   \]

2. The shaded part of the whole represents:
   \[
   \frac{25}{100} = \text{ } \frac{25}{100} \text{ of } 100 \text{ equal parts, } \frac{1}{4} = \text{ } \frac{1}{4} \text{ of } 4 \text{ equal parts, and the decimal } 0.25.
   \]

3. The shaded part of the whole represents:
   \[
   \frac{110}{100} = \text{ } \frac{110}{100} \text{ of } 100 \text{ equal parts, } \frac{11}{10} = \text{ } \frac{11}{10} \text{ of } 10 \text{ equal parts, } \frac{1}{10} = \text{ } \frac{1}{10} \text{ whole and } \frac{1}{10} \text{ of } 10 \text{ equal parts, and the decimal } 1.1.
   \]

Solve.

4. Juan shaded a part of the whole. Four fractions represent the shaded part of the whole. List each fraction. Explain how each fraction relates to the shaded part of the whole.
   \[
   \frac{50}{100} : 50 \text{ of } 100 \text{ equal parts or pennies; } \frac{5}{10} : 5 \text{ of } 10 \text{ equal parts with 10 pennies in each part; and } \frac{1}{2} : 1 \text{ of } 2 \text{ equal parts with 50 pennies in each part; } \frac{2}{4} : 2 \text{ of } 4 \text{ equal parts with 25 pennies in each part.}
   \]
Convert each measurement.

1. \(12 \text{ hrs} = \frac{720}{1} \text{ min}\)
2. \(2 \text{ months} = \frac{8}{1} \text{ wks}\)
3. \(43 \text{ min} = \frac{2580}{1} \text{ sec}\)
4. \(6 \text{ days} = \frac{144}{1} \text{ hrs}\)

Write the equivalent mixed number.

5. \(\frac{12}{5} = \frac{22}{5}\)
6. \(\frac{19}{4} = \frac{43}{4}\)
7. \(\frac{15}{2} = \frac{71}{2}\)
8. \(\frac{29}{3} = \frac{92}{3}\)
9. \(\frac{49}{8} = \frac{61}{8}\)
10. \(\frac{37}{6} = \frac{61}{6}\)

The line plot shows how much hair Emmy had cut each time she went to the hair dresser this year. Use the line plot to answer Exercises 11–12.

11. How many times did Emmy get her hair cut in the year?
   
   12 times

12. How much longer was the length of hair Emmy had cut most often than the length of hair she had cut least often?
   
   \(\frac{1}{4}\) inch

13. **Stretch Your Thinking** Milo has 3 quarters in his right pocket and 8 dimes in his left pocket. Show the amount of money Milo has in each pocket as a sum of fractions and as a sum of decimals. In which pocket is there more money?
   
   Right pocket: \(\frac{25}{100} + \frac{25}{100} + \frac{25}{100} = \frac{75}{100} = 0.25 + 0.25 + 0.25 = 0.75\). Left pocket: \(\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{8}{10} = 0.10 + 0.10 + 0.10 + 0.10 + 0.10 + 0.10 + 0.10 + 0.10 = 0.80\). There is more money in Milo’s left pocket.
Write a fraction and a decimal number to show what part of each bar is shaded.

1. Fraction: \(\frac{7}{10}\)  
   Decimal Number: 0.7

2. Fraction: \(\frac{13}{100}\)  
   Decimal Number: 0.13

Write these amounts as decimal numbers.

3. 5 tenths 0.5  
4. 9 hundredths 0.09  
5. 56 hundredths 0.56  
6. \(\frac{80}{100}\) 0.80  
7. \(\frac{3}{10}\) 0.3  
8. \(\frac{1}{100}\) 0.01  
9. 3 cents $0.03  
10. 2 quarters $0.50  
11. 3 nickels $0.15

Answer the questions below.

12. If you took a test with 10 questions and got 7 of them right, what decimal part would that be? 0.7  
   What decimal part did you get wrong? 0.3

13. If you had a dollar and spent 5 cents, what decimal amount did you spend? $0.05  
   What decimal amount do you have left? $0.95

14. If you had a bag of 100 beads and used 40, what decimal number did you use? Express this number in both tenths and hundredths. 0.4 0.40

15. If you had to travel 100 miles and went 25 miles, what decimal part of the trip did you travel? 0.25 miles  
   What decimal part of the trip do you still have left? 0.75 miles
Convert.

1. \(7 \text{ ft} = \frac{84}{8} \text{ in.}\)
2. \(4 \text{ mi} = \frac{7,040}{8} \text{ yd}\)
3. \(15 \text{ yd} = \frac{45}{8} \text{ ft}\)
4. \(2 \text{ yd} = \frac{72}{8} \text{ in.}\)

Add or subtract.

5. \(8\frac{4}{8} + 2\frac{2}{8} = 10\frac{6}{8}\)
6. \(1\frac{1}{3} + 7\frac{1}{3} = 8\frac{2}{3}\)
7. \(5\frac{11}{12} - 1\frac{5}{12} = 4\frac{6}{12}\)
8. \(8\frac{2}{5} - 7\frac{4}{5} = \frac{3}{5}\)

Use the visual to fill in each blank.

9. The shaded part of the whole represents:
   \[\frac{70}{100}\] represents \[\frac{70}{100}\] of \[\frac{100}{100}\] equal parts
   and the decimal \[0.70\].
   \[\frac{7}{10}\] represents \[\frac{7}{10}\] of \[\frac{10}{10}\] equal parts
   and the decimal \[0.7\].

10. **Stretch Your Thinking** Rosemary put 7 dimes and
    3 pennies in a tip jar at the café. Show this amount
    as a decimal and as a fraction. How much more
    change would Rosemary have to put in the tip jar
    to make a whole dollar?
    \[0.73 = \frac{73}{100\}; \text{ Another } 0.27 \text{ or } \frac{27}{100}\] would make
    one whole dollar.
Write the decimal numbers that come next.

1. 0.05 0.06 0.07 __0.08__ 0.09 0.10 0.11
2. 0.26 0.27 0.28 __0.29__ 0.30 0.31 0.32
3. 0.3 0.4 0.5 __0.6__ 0.7 0.8 0.9

Write each number in decimal form.

4. 9 tenths __0.9__
5. 5 hundredths __0.05__
6. 29 hundredths __0.29__
7. \(\frac{73}{100} = 0.73\)
8. \(\frac{2}{10} = 0.2\)
9. \(\frac{8}{100} = 0.08\)
10. 4 pennies __0.04__
11. 3 quarters __0.75__
12. 6 dimes and 1 nickel __0.65__

Solve.

A small jar contains 4 white gumballs and 6 red gumballs.

13. What decimal number shows which part of the gumballs are red? __0.6__
14. What decimal number shows which part of the gumballs are white? __0.4__
15. A large jar of 100 gumballs has the same fractions of red gumballs and white gumballs as the small jar. How many gumballs in the large jar are red? __60__ How many are white? __40__

A sidewalk has 100 squares. There are cracks in 9 of the squares.

16. What decimal number shows what part of the sidewalk is cracked? __0.09__
17. What fraction shows what part of the sidewalk is cracked? \(\frac{9}{100}\)

Write each decimal tenth as a decimal hundredth.

18. 0.6 = __0.60__
19. 0.2 = __0.20__
20. 0.5 = __0.50__
Solve.

1. Mena bought a 1-gallon jug of water. How many 2-cup servings are in the jug?
   
   8 servings

2. Kaden’s filled backpack weighs 7 pounds. How many ounces does the backpack weigh?
   
   112 ounces

Add or subtract.

3. \( \frac{7}{8} - \frac{3}{8} = \frac{4}{8}, \text{ or } \frac{1}{2} \)

4. \( \frac{1}{4} + \frac{3}{4} = 1 \)

5. \( 10\frac{11}{12} - 5\frac{4}{12} = 5\frac{7}{12} \)

6. \( \frac{2}{3} + \frac{2}{3} = 1\frac{1}{3} \)

7. \( \frac{4}{9} + \frac{4}{9} = \frac{8}{9} \)

8. \( 8\frac{5}{6} - 4\frac{4}{6} = 4\frac{1}{6} \)

Write these amounts as decimal numbers.

9. 8 tenths 0.8

10. 5 hundredths 0.05

11. 27 hundredths 0.27

12. \( \frac{2}{100} = 0.02 \)

13. \( \frac{93}{100} = 0.93 \)

14. \( \frac{7}{10} = 0.7 \)

15. 46 pennies 0.46

16. 3 nickels 0.15

17. 9 dimes 0.9

18. Stretch Your Thinking  Ben says that 0.80 is greater than 0.8 because 80 is greater than 8. Explain his error.

   Possible answer: the 0 at the end of the decimal number does not make a difference like it does with whole numbers. The decimal 0.80 is equivalent to the fraction \( \frac{80}{100} \). The decimal 0.8 is equivalent to the fraction \( \frac{8}{10} \). 80 parts of a whole divided into 100 parts is the same amount as 8 parts of a whole divided into 10 parts. It’s like saying 80 pennies is equal to 8 dimes.
Write each number in decimal form.

1. 6 tenths 0.6  
2. 85 hundredths 0.85  
3. 9 hundredths 0.09  
4. 7 tenths 0.7  
5. \( \frac{4}{100} \) 0.04  
6. \( \frac{29}{10} \) 2.9  
7. \( \frac{23}{10} \) 2.3  
8. \( 11 \frac{3}{100} \) 11.03  
9. 6 cents $0.06  
10. twelve and 5 tenths 12.5  
11. thirty and 25 hundredths 30.25

Write each decimal in expanded form.

12. 27.9 \( 20 + 7 + 0.9 \)  
13. 153.76 \( 100 + 50 + 3 + 0.7 + 0.06 \)  
14. 203.06 \( 200 + 3 + 0.06 \)

Use the graph to answer questions 15–17.

15. What decimal part of all the melons did Amy pick? 0.1  
16. What decimal part of all the melons did Paco pick? 0.4  
17. What decimal part of all the melons did Joey and Lisa pick together? 0.5

Solve.

18. A centipede has 100 legs. What decimal part is one leg? 0.01  
19. At a banquet, each cake was cut into 100 pieces. The guests ate 4 whole cakes and all but one piece of another. What decimal number represents the number of cakes that were eaten? 4.99  
20. Miguel earned $10 and saved $3. What decimal part did he save? 0.3  
21. Jing earned $100, and saved $30. What decimal part did she save? 0.30
Add or subtract.

1. \[ \begin{array}{c}
5,000 \\
- 3,296 \\
\hline
1,704
\end{array} \]

2. \[ \begin{array}{c}
286,361 \\
+ 45,743 \\
\hline
332,104
\end{array} \]

3. \[ \begin{array}{c}
863,542 \\
- 794,815 \\
\hline
68,727
\end{array} \]

Multiply.

4. \[ 4 \times \frac{1}{5} = \frac{4}{5} \]

5. \[ 9 \times \frac{2}{3} = \frac{18}{3}, \text{ or } 6 \]

6. \[ 3 \times \frac{7}{8} = \frac{21}{8}, \text{ or } 2\frac{5}{8} \]

7. \[ 2 \times \frac{5}{12} = \frac{10}{12}, \text{ or } \frac{5}{6} \]

8. \[ 5 \times \frac{6}{7} = \frac{30}{7}, \text{ or } 4\frac{2}{7} \]

9. \[ 7 \times \frac{9}{10} = \frac{63}{10}, \text{ or } 6\frac{3}{10} \]

Write the decimal numbers that come next.

10. \[ 0.03 \quad 0.04 \quad 0.05 \quad \underline{0.06}; \quad \underline{0.07}; \quad \underline{0.08}; \quad \underline{0.09} \]

11. \[ 0.2 \quad 0.3 \quad 0.4 \quad \underline{0.5}; \quad \underline{0.6}; \quad \underline{0.7}; \quad \underline{0.8} \]

12. \[ 0.75 \quad 0.76 \quad 0.77 \quad \underline{0.78}; \quad \underline{0.79}; \quad \underline{0.80}; \quad \underline{0.81} \]

Write each decimal tenth as a decimal hundredth.

13. \[ 0.4 = \underline{0.40} \]

14. \[ 0.9 = \underline{0.90} \]

15. \[ 0.1 = \underline{0.10} \]

16. \[ 0.3 = \underline{0.30} \]

17. \[ 0.5 = \underline{0.50} \]

18. \[ 0.7 = \underline{0.70} \]

19. **Stretch Your Thinking** A handful of paperclips is 5.2 grams. A handful of push pins is 500 centigrams. Which handful weighs more? Explain.

   The handful of paperclips weighs more. Each gram is equal to 100 centigrams. So, 5.2 grams = \(520\) centigrams. Since 520 centigrams > 500 centigrams, the paperclips weigh more.
Write these amounts as decimal numbers.

1. 4 tenths \(0.4\)
2. 72 hundredths \(0.72\)
3. 6 hundredths \(0.06\)
4. 8 cents \(0.08\)
5. \(\frac{68}{100} = 0.68\)
6. \(\frac{6\frac{7}{10}}{1} = 6.07\)
7. \(\frac{16}{100} = 0.16\)
8. \(\frac{8}{100} = 0.08\)
9. 30 hundredths \(0.30\)

Circle the number that does not have the same value as the others.

10. 0.95 0.950 0.905
11. 0.2 0.20 0.02
12. 0.730 0.703 0.73
13. 1.6 1.60 1.06
14. 0.59 5.90 \(\frac{59}{100}\)
15. 0.08 0.008 0.080

Write >, <, or = to compare these numbers.

16. 4.67 < 12.7
17. 0.35 < 0.4
18. 4.58 > 1.25
19. 8.3 > 0.83
20. 0.92 > 0.91
21. 2.3 > 0.84
22. 10.1 > 10.01
23. 7.4 > 0.74

The table shows how far four students jumped in the long jump contest. Use the table to answer the questions.

24. Whose jump was longest? Hester
25. Whose jump was shortest? Amanda
26. Which two students jumped the same distance? Joshua, Miguel

<table>
<thead>
<tr>
<th>Name</th>
<th>Length of Jump</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joshua</td>
<td>1.60 meters</td>
</tr>
<tr>
<td>Amanda</td>
<td>1.59 meters</td>
</tr>
<tr>
<td>Hester</td>
<td>1.7 meters</td>
</tr>
<tr>
<td>Miguel</td>
<td>1.6 meters</td>
</tr>
</tbody>
</table>
Choose a measurement unit for each rectangle and find the area and perimeter. Show your work.

1. 11 by 8
   - 88 sq units;
   - 38 units

2. 5 by 9
   - 45 sq units;
   - 28 units

3. 2 by 6
   - 12 sq units;
   - 16 units

Multiply.

4. $5 \cdot \frac{2}{3} = \frac{10}{3}$ or $3\frac{1}{3}$

5. $12 \cdot \frac{1}{5} = \frac{12}{5}$ or $2\frac{2}{5}$

6. $8 \cdot \frac{4}{7} = \frac{32}{7}$ or $4\frac{4}{7}$

7. $6 \cdot \frac{3}{8} = \frac{18}{8}$ or $2\frac{2}{8} = 2\frac{1}{4}$

Solve.

8. There are 10 servings in a bag of pretzels. At a school picnic, 3 whole bags are eaten and 7 servings of another bag. What decimal number represents the number of bags of pretzels that are eaten?
   - $3.7$

9. **Stretch Your Thinking** Lance says that you can compare any decimal numbers the way that you alphabetize words. You can tell which number is less (or which word comes first in the dictionary) by comparing each digit (or letter) from left to right. Is Lance’s thinking correct? Give a numerical example to explain your reasoning.
   - No, his thinking is not correct. For example, if you compare 45.9 to 6.73 using Lance’s method, you would say 45.9 is less than 6.73 since 4 is less than 6. This is not correct. The 4 is in the tens place and there are no tens in 6.73. So, 45.9 is actually greater.
Write >, <, or = to compare these numbers.

1. \( \frac{3}{4} \) □ \( \frac{2}{8} \)  
2. \( \frac{4}{10} \) □ \( \frac{4}{5} \)  
3. \( \frac{3}{6} \) □ \( \frac{3}{6} \)  
4. \( 1\frac{1}{6} \) □ \( 1\frac{1}{4} \)  
5. \( 2\frac{7}{8} \) □ \( 2\frac{3}{7} \)  
6. \( 1\frac{4}{9} \) □ \( 1\frac{5}{10} \)

Complete.

7. \( \frac{3}{9} = \frac{3 \times 5}{9 \times 5} = \frac{15}{45} \)  
8. \( \frac{6}{10} = \frac{6 \times 2}{10 \times 2} = \frac{12}{20} \)  
9. \( \frac{5}{8} = \frac{5 \times 8}{8 \times 8} = \frac{40}{64} \)  
10. \( \frac{24}{30} = \frac{24 \div 6}{30 \div 6} = \frac{4}{5} \)  
11. \( \frac{28}{35} = \frac{28 \div 7}{35 \div 7} = \frac{4}{5} \)  
12. \( \frac{6}{18} = \frac{6 \div 6}{18 \div 6} = \frac{1}{3} \)

Solve.

13. Cole lives 2.4 miles from the library. Gwen lives 2.04 miles from the library. Xander lives 2.40 miles from the library. Who lives closest to the library: Cole, Gwen, or Xander?
   
   **Gwen**

14. After making his art project, Robbie has \( \frac{2}{10} \) yard of rope left. What is \( \frac{2}{10} \) written as a decimal?
   
   0.2 or 0.20
Solve.

1 A 2-quart bottle of juice has 1,040 calories. Each serving is 1 cup. How many calories are in each serving of the juice?

\[
130 \text{ calories; } 1 \text{ qt} = 4 \text{ C; } 2 \text{ qt} = 8 \text{ C;}
\]

\[
1 \text{ bottle} = 8 \text{ servings; } 1,040 \div 8 = 130
\]

2 The perimeter of a photograph is 20 inches. The longer side of the photograph is 6 inches. What is the length of the shorter side?

\[
4 \text{ inches; } 6 + 6 = 12; 20 - 12 = 8; 8 \div 2 = 4 \text{ inches}
\]

Write an equation. Then solve.

Equations will vary.

3 Peggy needs \( \frac{3}{4} \) cup of flour for each batch of pancakes. If she makes 5 batches of pancakes, how many cups of flour does she use?

\[
f = 5 \cdot \frac{3}{4}; f = 3\frac{3}{4}; 3\frac{3}{4} \text{ cups}
\]

Compare. Use < or >.

4 \( 26.3 > 8.3 \) 5 \( 5.09 < 5.9 \) 6 \( 1.7 < 7.1 \) 7 \( 84.2 > 8.42 \)

8 \( 9.40 > 9.04 \) 9 \( 57 > 5.7 \) 10 \( 11.28 < 12.8 \) 11 \( 6.31 > 6.13 \)

12 Stretch Your Thinking On the first day of a trip, the Brenner family hikes 2.8 miles. On the second day, they hike \( 1\frac{2}{5} \) miles along a trail. They take a break, and hike back to where they started. Did they hike more the first day or the second day? Explain.

They hiked the same amount on both days. On the second day, they hiked \( 1\frac{2}{5} + 1\frac{2}{5} = 2\frac{4}{5} \) miles. This is equivalent to \( 2\frac{8}{10} \) miles, which is 2.8 as a decimal.