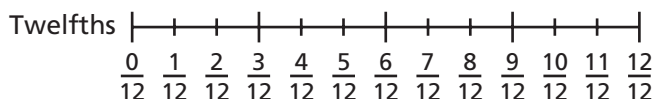
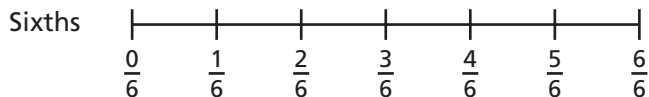
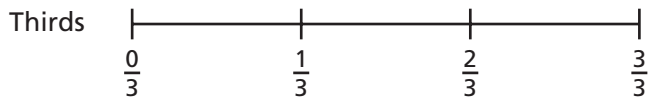


Remembering

Use the number lines to complete Exercises 1–3.



1. If you run $\frac{2}{3}$ mile, how many sixths have you run?

2. If you measure $\frac{5}{6}$ meter, how many twelfths have you measured?

3. If you have $\frac{8}{12}$ of a pizza, how many thirds do you have?

Write each fraction as a decimal.

4. $\frac{76}{1,000} =$ _____ 5. $\frac{7}{10} =$ _____ 6. $\frac{49}{100} =$ _____ 7. $\frac{32}{1,000} =$ _____

Add or subtract.

8. $0.28 + 0.43 =$ _____ 9. $0.7 + 0.04 =$ _____ 10. $7.8 - 1.95 =$ _____

11. **Stretch Your Thinking** Draw a diagram that shows $\frac{1}{5}$ times 30 equals 6.

Remembering

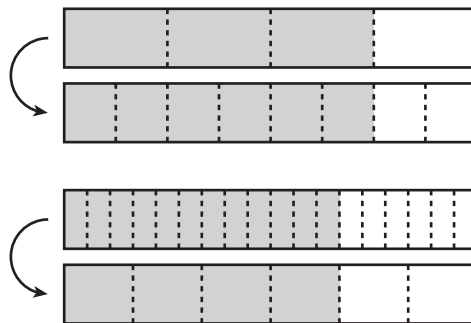
Complete each exercise about the pairs of fraction bars.

1. What equivalent fractions are shown? _____

2. Identify the multiplier. _____

3. What equivalent fractions are shown? _____

4. Identify the divisor. _____



Write each amount as a decimal number.

5. $\frac{84}{1,000}$ _____

6. $\frac{31564}{1,000}$ _____

7. $\frac{1176}{100}$ _____

8. $\frac{876}{1,000}$ _____

Solve. Write a multiplication equation for each problem.

Jonas has 8 sponsors for the school walk-a-thon.

Maura has 3 times as many sponsors as Jonas.

Trenton has $\frac{1}{4}$ as many sponsors as Jonas.

9. How many sponsors does Maura have? _____

Write the equation. _____

10. How many sponsors does Trenton have? _____

Write the equation. _____

11. **Stretch Your Thinking** Hannah and Jo are driving separately to a restaurant that is 60 miles away from their town. Hannah drives $\frac{3}{5}$ of the distance and Jo drives $\frac{5}{6}$ of the distance before stopping for gasoline. Who has driven farther? How many more miles does each driver need to drive to reach the restaurant?

Remembering

Compare.

1. $\frac{5}{6} \bigcirc \frac{5}{7}$

2. $\frac{1}{5} \bigcirc \frac{1}{4}$

3. $\frac{8}{10} \bigcirc \frac{6}{8}$

4. $\frac{6}{7} \bigcirc \frac{7}{8}$

5. $\frac{2}{3} \bigcirc \frac{3}{4}$

6. $\frac{8}{9} \bigcirc \frac{6}{7}$

Compare.

7. $0.54 \bigcirc 0.65$

8. $0.207 \bigcirc 0.342$

9. $0.5 \bigcirc 0.47$

10. $0.76 \bigcirc 0.67$

11. $0.22 \bigcirc 0.41$

12. $0.6 \bigcirc 0.06$

Multiply.

13. $\frac{4}{5} \cdot 20 = \underline{\hspace{2cm}}$

14. $\frac{2}{3} \cdot 21 = \underline{\hspace{2cm}}$

15. $\frac{5}{8} \cdot 24 = \underline{\hspace{2cm}}$

16. $\frac{1}{9} \cdot 36 = \underline{\hspace{2cm}}$

17. $\frac{3}{4} \cdot 16 = \underline{\hspace{2cm}}$

18. $\frac{2}{7} \cdot 14 = \underline{\hspace{2cm}}$

19. $\frac{3}{12} \cdot 24 = \underline{\hspace{2cm}}$

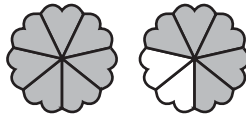
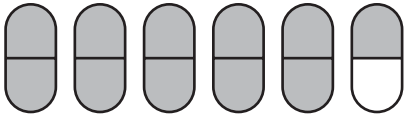
20. $\frac{8}{10} \cdot 80 = \underline{\hspace{2cm}}$

21. $\frac{3}{9} \cdot 45 = \underline{\hspace{2cm}}$

22. **Stretch Your Thinking** Write a multiplication equation using one whole number and one fraction that have a product of $\frac{18}{8}$.

Remembering

Name the mixed number shown by the shaded parts.



1. _____

2. _____

3. _____

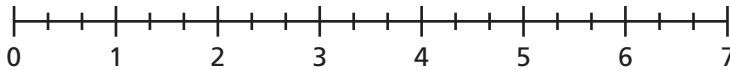
Add.

4. $454 + 0.65 =$ _____

5. $80.55 + 0.91 =$ _____

6. $31.78 \text{ m} + 6.2 \text{ m} =$ _____

7. Show $\frac{1}{3}$ of 7 on the number line.



8. Write $\frac{1}{3}$ of 7 as a fraction. _____

9. Write $\frac{1}{3}$ of 7 as a mixed number. _____

10. **Stretch Your Thinking** Solve for the unknown fraction.

Then divide and shade an area model to show the equation. $\frac{2}{5} \cdot ? = \frac{10}{30}$.



Remembering

Add or subtract.

1. $1\frac{4}{5} + 5\frac{2}{5}$

2. $5\frac{1}{6} + 3\frac{5}{6}$

3. $1\frac{2}{3} - \frac{1}{3}$

4. $\frac{3}{4} + \frac{5}{4}$

5. $7\frac{8}{9} - 3\frac{5}{9}$

6. $6 - 4\frac{1}{2}$

Subtract.

7. $31,763 - 6.51 =$

8. $132.76 - 87.24 =$

9. $968.29 - 217.5 =$

10. Use the number line to find $\frac{3}{4} \cdot \frac{2}{5}$. Label all the parts above and below.

$$\frac{3}{4} \cdot \frac{2}{5} = \underline{\hspace{2cm}}$$



11. **Stretch Your Thinking** Write a word problem that will use the equation $\frac{2}{6} \cdot \frac{8}{10} = x$ in order to solve. Then simplify and multiply to solve.

Remembering

Add.

1. $\frac{3}{8} + \frac{1}{6}$

2. $\frac{1}{5} + \frac{3}{4}$

3. $\frac{5}{6} + \frac{1}{8}$

4. $\frac{1}{3} + \frac{2}{7}$

5. $\frac{2}{3} + \frac{1}{9}$

6. $\frac{4}{5} + \frac{1}{10}$

Use the Commutative Property to solve for n .

7. $55,207 + 87,331 = 87,331 + n$

$n = \underline{\hspace{2cm}}$

8. $48.76 + 20.08 = 20.08 + n$

$n = \underline{\hspace{2cm}}$

Multiply. Simplify first if you can.

9. $\frac{2}{3} \cdot \frac{3}{4} = \underline{\hspace{2cm}}$

10. $\frac{7}{10} \cdot \frac{6}{7} = \underline{\hspace{2cm}}$

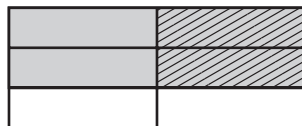
11. $\frac{3}{5} \cdot \frac{5}{6} = \underline{\hspace{2cm}}$

12. $\frac{5}{6} \cdot \frac{12}{25} = \underline{\hspace{2cm}}$

13. $\frac{1}{2} \cdot \frac{4}{7} = \underline{\hspace{2cm}}$

14. $\frac{2}{9} \cdot \frac{3}{8} = \underline{\hspace{2cm}}$

15. **Stretch Your Thinking** Complete the mixed number equation that is represented by the area model.



$$\frac{1}{2} \cdot \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Remembering

Subtract.

1. $\frac{3}{4} - \frac{1}{6}$

2. $\frac{2}{9} - \frac{1}{10}$

3. $\frac{7}{8} - \frac{1}{4}$

4. $\frac{6}{7} - \frac{1}{3}$

5. $\frac{4}{5} - \frac{2}{3}$

6. $\frac{1}{2} - \frac{1}{8}$

Estimate each sum or difference.

7. $6.759 + 2.099$ _____

8. $\$44.25 - \21.76 _____

9. $14.6 + 2.4$ _____

Find each product by first rewriting each mixed number as a fraction.

10. $\frac{5}{8} \cdot 3\frac{1}{3} =$ _____

11. $4\frac{3}{5} \cdot 5 =$ _____

12. $1\frac{2}{5} \cdot 3\frac{4}{9} =$ _____

13. $6\frac{1}{5} \cdot \frac{5}{8} =$ _____

14. **Stretch Your Thinking** Give an example that shows how to use the Distributive Property to multiply a number by a sum. All of the numbers you use should be mixed numbers or fractions.

Remembering

Multiply.

$$\begin{array}{r} 1. \quad 2,548 \\ \times \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 21 \\ \times 45 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 3,015 \\ \times \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 33 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 65 \\ \times 87 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 215 \\ \times 9 \\ \hline \end{array}$$

Find each product by first rewriting each mixed number as a fraction.

$$7. \quad 4\frac{4}{9} \cdot 2\frac{2}{3} = \underline{\hspace{2cm}}$$

$$8. \quad 6\frac{1}{5} \cdot 10 = \underline{\hspace{2cm}}$$

$$9. \quad 3\frac{5}{6} \cdot \frac{12}{13} = \underline{\hspace{2cm}}$$

$$10. \quad 5\frac{1}{3} \cdot \frac{3}{5} = \underline{\hspace{2cm}}$$

Solve.

$$11. \quad \frac{6}{7} - \frac{2}{7}$$

$$12. \quad \frac{4}{9} + \frac{2}{3}$$

$$13. \quad \frac{2}{3} \cdot \frac{9}{10}$$

$$14. \quad \frac{3}{5} \cdot \frac{5}{8}$$

$$15. \quad 8 - \frac{1}{7}$$

$$16. \quad \frac{1}{6} + \frac{3}{8}$$

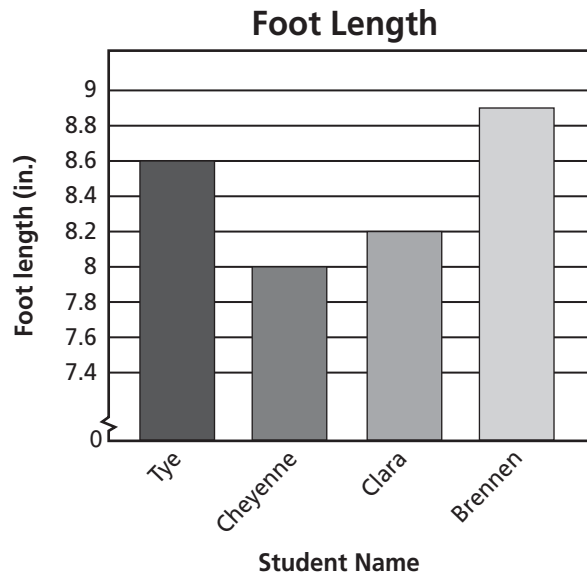
17. **Stretch Your Thinking** Write and solve a word problem that requires multiplying two mixed numbers.

Remembering

Perry measured the foot length of four friends for a science fair experiment. Then, he made a bar graph to display his results.

1. How much longer is Brennen's foot than Clara's foot?

2. What is the difference between the longest foot and the shortest foot?



Solve.

3. $\frac{7}{8} \cdot \frac{4}{9}$

4. $11 - \frac{3}{4}$

5. $\frac{4}{5} + \frac{7}{10}$

6. $\frac{9}{12} - \frac{5}{12}$

7. $\frac{7}{15} + \frac{2}{3}$

8. $\frac{5}{6} \cdot \frac{9}{11}$

Complete each fraction box.

$\frac{7}{12}$ and $\frac{5}{6}$	
>	
+	
-	
·	

$\frac{4}{5}$ and $\frac{2}{3}$	
>	
+	
-	
·	

9. **Stretch Your Thinking** Write two multiplication equations using fractions and mixed numbers. Write one equation that will have a product greater than the first factor. Then write another equation that will have a product less than the first factor.

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 2\frac{3}{4} \\ - 1\frac{5}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 4\frac{2}{3} \\ + 1\frac{5}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 10\frac{1}{2} \\ - 3\frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 7 \\ - 2\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 3\frac{2}{5} \\ + 4\frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 8\frac{1}{3} \\ + 1\frac{3}{4} \\ \hline \end{array}$$

Complete each fraction box.

7.

$\frac{2}{5}$ and $\frac{2}{7}$	
>	
+	
-	
·	

8.

$\frac{5}{6}$ and $\frac{6}{7}$	
>	
+	
-	
·	

Predict whether the product will be greater than, less than, or equal to the second factor. Then compute the product.

9. $\frac{2}{3} \cdot 5 = x$

Predict: $x \bigcirc 5$

Compute: $x = \underline{\hspace{2cm}}$

10. $\frac{3}{3} \cdot 5 = x$

Predict: $x \bigcirc 5$

Compute: $x = \underline{\hspace{2cm}}$

11. $1\frac{1}{6} \cdot 5 = x$

Predict: $x \bigcirc 5$

Compute: $x = \underline{\hspace{2cm}}$

12. **Stretch Your Thinking** Draw a diagram to show how many twelfths there are in 3. Describe a situation in which you would need to know how many twelfths there are in 3.

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 1\frac{1}{8} \\ + 4\frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 6\frac{1}{4} \\ - 4\frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 9\frac{1}{3} \\ + 7\frac{8}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 5\frac{2}{7} \\ + 5\frac{11}{14} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 4 \\ - 2\frac{2}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 6\frac{5}{8} \\ + 3\frac{1}{2} \\ \hline \end{array}$$

Predict whether the product will be greater than, less than, or equal to the second factor. Then compute the product.

$$7. \quad \frac{5}{5} \cdot 9 = x$$

Predict: $x \bigcirc 9$

Compute: $x = \underline{\hspace{2cm}}$

$$8. \quad \frac{7}{8} \cdot 9 = x$$

Predict: $x \bigcirc 9$

Compute: $x = \underline{\hspace{2cm}}$

$$9. \quad 1\frac{3}{5} \cdot 9 = x$$

Predict: $x \bigcirc 9$

Compute: $x = \underline{\hspace{2cm}}$

$$10. \quad 1\frac{1}{2} \cdot \frac{4}{5} = x$$

Predict: $x \bigcirc \frac{4}{5}$

Compute: $x = \underline{\hspace{2cm}}$

$$11. \quad \frac{6}{6} \cdot \frac{4}{5} = x$$

Predict: $x \bigcirc \frac{4}{5}$

Compute: $x = \underline{\hspace{2cm}}$

$$12. \quad \frac{2}{5} \cdot \frac{4}{5} = x$$

Predict: $x \bigcirc \frac{4}{5}$

Compute: $x = \underline{\hspace{2cm}}$

Divide.

$$13. \quad 6 \div \frac{1}{4} = \underline{\hspace{2cm}}$$

$$14. \quad 2 \div 3 = \underline{\hspace{2cm}}$$

$$15. \quad 10 \div 3 = \underline{\hspace{2cm}}$$

$$16. \quad 200 \div \frac{1}{4} = \underline{\hspace{2cm}}$$

$$17. \quad \frac{1}{4} \div 8 = \underline{\hspace{2cm}}$$

$$18. \quad \frac{1}{7} \div 6 = \underline{\hspace{2cm}}$$

19. Stretch Your Thinking Harrison is playing a board game that has a path of 100 spaces. After his first turn, he is $\frac{1}{5}$ of the way along the spaces. On his second turn, he moves $\frac{1}{4}$ fewer spaces than he moved on his first turn. On his third turn, he moves $1\frac{1}{4}$ times as many spaces than he moved on his first turn. What space is he on after three turns?

Remembering

Multiply.

1. $134 \cdot 5 =$ _____

2. $44 \cdot 21 =$ _____

3. $7 \cdot 57 =$ _____

4. $4,507 \cdot 3 =$ _____

5. $36 \cdot 76 =$ _____

6. $1,928 \cdot 6 =$ _____

Divide.

7. $\frac{1}{9} \div 2 =$ _____

8. $100 \div \frac{1}{3} =$ _____

9. $\frac{1}{5} \div 4 =$ _____

10. $4 \div 5 =$ _____

11. $12 \div 5 =$ _____

12. $8 \div \frac{1}{7} =$ _____

Write an equation. Then solve.

Show your work.

13. Marc is running 5 kilometers at track practice. He decides to break the run into 3 equal lengths. How long will each length be?

14. **Stretch Your Thinking** Using a whole number and a fraction as factors, write a multiplication equation with a product less than the whole number factor. Draw a picture to show how the product is less than the whole number factor.

Remembering

Use benchmarks of 0, $\frac{1}{2}$, and 1 to estimate the sum or difference. Then find the actual sum or difference.

1. $\frac{5}{10} + \frac{4}{9}$

Estimate: _____

Sum: _____

2. $\frac{13}{14} - \frac{3}{7}$

Estimate: _____

Difference: _____

3. $\frac{8}{9} - \frac{7}{8}$

Estimate: _____

Difference: _____

4. $\frac{13}{14} + \frac{3}{4}$

Estimate: _____

Sum: _____

Write an equation. Then solve.

Show your work.

5. A rectangle has an area of 20 square feet and a length of 6 feet. What is its width?

6. Bailey attends gymnastics practice for 8 hours each week. This is $\frac{1}{4}$ the number of hours that the gym is open for practice. How many hours is the gym open for practice?

Solve.

7. $\frac{1}{4} \div 3 =$ _____

8. $\frac{1}{4} \cdot 3 =$ _____

9. $14 \cdot \frac{1}{6} =$ _____

10. **Stretch Your Thinking** How is solving $\frac{1}{8} \div 5$ different from solving $\frac{1}{8} \cdot 5$?
