

**Students Entering  
Sixth Grade  
2019  
Summer Math Packet**

Name \_\_\_\_\_

# SUMMER MATH FUN

Dear Parents,

The attached packet provides a range of activities that review and expand on the math concepts your student has learned in school this past year. It is designed to be worked on for 15 to 30 minutes a day throughout the summer, rather than completed in just a few days at the beginning or end of summer.

The goal is to keep skills sharp to be ready to move forward into the next school year. Students will be asked to hand in their completed work the first week of school.

Have a great summer!

Mr. Izzo

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Name \_\_\_\_\_

**Review**  
**2**

## Adding and Subtracting Decimals

Find  $1.7 + 2.45$ .

Find  $36.57 - 4.6$ .

<p><i>Line up the decimal points.</i></p> $\begin{array}{r} \downarrow \qquad \uparrow \\ 1.7 \qquad 1.70 \leftarrow \text{Write zeros to} \\ + 2.45 \quad + 2.45 \quad \text{show place value.} \\ \hline 4.15 \end{array}$ <p style="text-align: center;"><math>\uparrow</math> Place decimal point in answer.</p>	<p><i>Line up the decimal points.</i></p> $\begin{array}{r} \downarrow \qquad \uparrow \quad \uparrow \\ 36.57 \quad 36.57 \quad \text{Write zeros to} \\ - 4.6 \quad - 4.60 \quad \text{show place value.} \\ \hline 31.97 \end{array}$ <p style="text-align: center;"><math>\uparrow</math> Place decimal point in answer.</p>
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Find each sum or difference.

1. 
$$\begin{array}{r} \downarrow \\ 2.65 \\ + 13.30 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} \downarrow \\ 14.10 \\ - 3.05 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 744 \\ + 36.2 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 9 \\ - 0.6 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 8.97 \\ + 66 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 100 \\ - 0.22 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 6.8 \\ + 237.29 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 0.5 \\ - 0.23 \\ \hline \end{array}$$

9.  $15.4 - 8 =$  \_\_\_\_\_

10.  $3 - 2.54 =$  \_\_\_\_\_

11.  $1.34 + 4.1 =$  \_\_\_\_\_

12.  $133.01 - 5.6 =$  \_\_\_\_\_

13.  $448 + 1.75 + 80.3 =$  \_\_\_\_\_

14.  $12.3 + 0.61 + 100 =$  \_\_\_\_\_

15. On the 3-days of their vacation, the Davis family traveled 417 mi, 45.3 mi, and 366.9 mi. How far did they travel all together?

\_\_\_\_\_

16. Etta bought a calculator for \$15. Glenn found the same model for \$9.79. How much more did Etta pay than Glenn did?

\_\_\_\_\_



Name \_\_\_\_\_

Review

4

# Multiplying with Decimals

Find  $4.3 \times 2.7$ .

Multiply as you would with whole numbers.

$$\begin{array}{r} 2 \\ 4.3 \\ \times 2.7 \\ \hline 301 \\ 860 \\ \hline 1161 \end{array}$$

Count the number of decimal places in both factors. The total is the number of decimal places in the product.

$$\begin{array}{r} 4.3 \leftarrow 1 \text{ decimal place} \\ \times 2.7 \leftarrow + 1 \text{ decimal place} \\ \hline 11.61 \leftarrow 2 \text{ decimal places} \end{array}$$

Find each product.

1. 
$$\begin{array}{r} 14 \\ \times 8.8 \\ \hline 112 \\ 1120 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 1.6 \\ \times .9 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 0.4 \\ \times 3.2 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 0.05 \\ \times 0.3 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 2.15 \\ \times 8.3 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 3.3 \\ \times 0.12 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 0.51 \\ \times 4.2 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 1.35 \\ \times 13 \\ \hline \end{array}$$

9.  $23 \times 0.47 =$  \_\_\_\_\_

10.  $0.9 \times 5 =$  \_\_\_\_\_

11.  $168 \times 2.25 =$  \_\_\_\_\_

12.  $0.8 \times 0.11 =$  \_\_\_\_\_

13.  $20 \times 20.2 =$  \_\_\_\_\_

14.  $4.9 \times 0.3 =$  \_\_\_\_\_

15. A roll of paper towels contained 250 sheets. Each sheet was 8.75 inches long. How long was the roll? \_\_\_\_\_

16. Tania bought 3 new sweaters. Each sold for \$19.99. How much did she spend? \_\_\_\_\_

Name \_\_\_\_\_

**Review**

**6**

## Dividing with Decimals

Find  $36.8 \div 16$ .

$\begin{array}{r} \downarrow \\ 16 \overline{)36.8} \\ \underline{32} \phantom{0} \\ 48 \\ \underline{48} \\ 0 \end{array}$ <p>Place the decimal point.          ← Think: <math>20 \overline{)40}</math></p> <p>Try 2 in the quotient.</p>	$\begin{array}{r} 2.3 \\ 16 \overline{)36.8} \\ \underline{-32} \phantom{0} \\ 48 \\ \underline{-48} \\ 0 \end{array}$ <p>Multiply <math>2 \times 16</math>.          Subtract. Bring down 8.          Multiply <math>3 \times 16</math>.          Subtract.</p>
--	--

Find each quotient.

$$1. \begin{array}{r} 2. \\ 6 \overline{)13.8} \\ \underline{-12} \phantom{0} \\ 18 \\ \underline{-18} \\ 0 \end{array}$$

2.  $6 \overline{)131.4}$

3.  $9 \overline{)141.3}$

4.  $5 \overline{)388.5}$

5.  $7 \overline{)669.2}$

6.  $28 \overline{)263.2}$

7.  $41 \overline{)274.7}$

8.  $7 \overline{)34.23}$

9.  $269.12 \div 8 =$  \_\_\_\_\_

10.  $311.56 \div 4 =$  \_\_\_\_\_

11.  $2,229.62 \div 46 =$  \_\_\_\_\_

12.  $1,449.09 \div 81 =$  \_\_\_\_\_

13. A photographer bought 36 rolls of film for \$136.44.  
 What was the price of one roll?

\_\_\_\_\_

14. Four students each ran 100 m in a 400-m relay race.  
 The team's total time was 49.44 sec. Find the average  
 time of each runner.

\_\_\_\_\_

Name \_\_\_\_\_

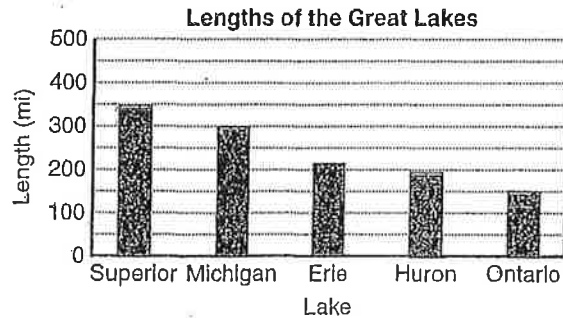
**Review**  
**8**

**Interpreting Data**

The **bar graph** shows the lengths in miles of the Great Lakes. Lengths of bars represent lengths of lakes.

Which is the shortest Great Lake?

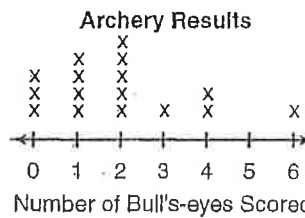
The shortest lake is Lake Ontario.



Use the graphs to answer each question.

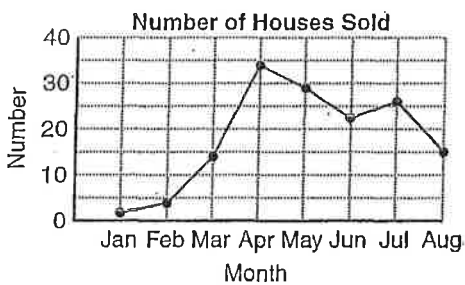
1. How many archers scored 4 bull's eyes?

\_\_\_\_\_



2. What was the most common number of bull's-eyes scored?

\_\_\_\_\_



3. In which month were the most houses sold?

\_\_\_\_\_

4. In which month were about the same number sold as were sold in August?

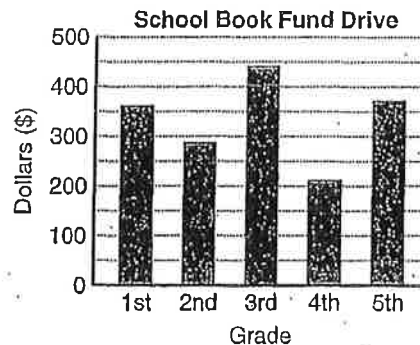
\_\_\_\_\_

5. Which grades raised about the same amount for the school book drive?

\_\_\_\_\_

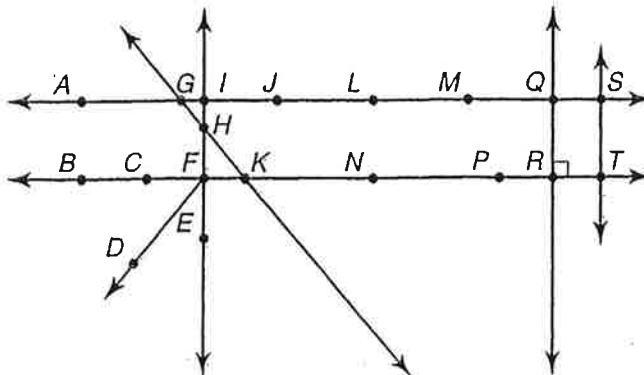
6. The school's goal was to raise \$1,500. About how much did they raise in all?

\_\_\_\_\_



# Geometric Ideas

- A **line** is a straight path of points that goes on forever in two directions. Examples:  $\overleftrightarrow{AS}$ ,  $\overleftrightarrow{GK}$ .
- A **ray** is a part of a line with one endpoint, extending forever in only one direction. Examples:  $\overrightarrow{FD}$ ,  $\overrightarrow{FB}$ .
- A **line segment** is part of a line with two endpoints. Examples:  $\overline{CF}$ ,  $\overline{MQ}$ .
- A **midpoint** is the point halfway between the endpoints of a line segment. Example: Point  $L$  is halfway between points  $J$  and  $M$  on  $\overline{JM}$ .
- **Congruent line segments** are line segments that have the same length. Example:  $\overline{QR}$  is congruent to  $\overline{ST}$ .
- **Parallel lines** are in the same plane but do not intersect. Example:  $\overleftrightarrow{AS}$  is parallel to  $\overleftrightarrow{BT}$ .



Use the diagram at the right. Name the following.

1. three line segments

\_\_\_\_\_

2. two parallel lines

\_\_\_\_\_

3. two lines that intersect  $\overleftrightarrow{DT}$

\_\_\_\_\_

4. two congruent line segments

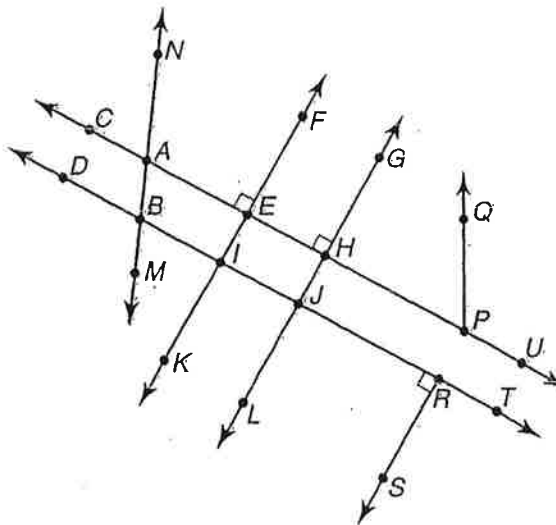
\_\_\_\_\_

5. two lines perpendicular to  $\overleftrightarrow{BR}$

\_\_\_\_\_

6. two midpoints of line segments

\_\_\_\_\_



Name \_\_\_\_\_

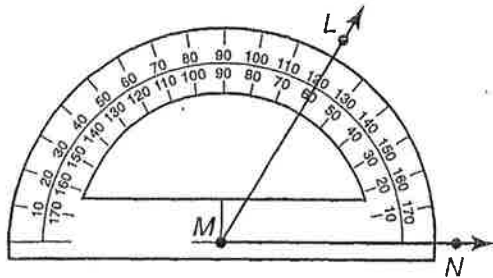
# Measuring and Drawing Angles

R 9-2

## How to measure an angle:

**Step 1** Place the protractor's center on the angle's vertex.

**Step 2** Place the  $0^\circ$  mark on one side of the angle.



$$LMN = 60^\circ$$

**Step 3** Use the scale beginning with the  $0^\circ$  mark to read the measurement where the other side of the angle crosses the protractor.

## How to draw an angle:

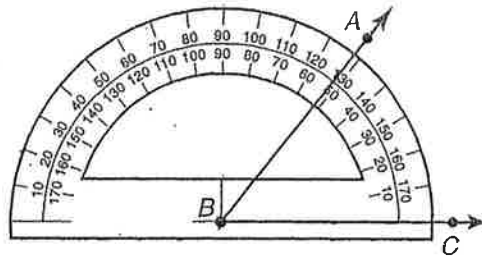
Draw an angle of  $52^\circ$ .

**Step 1** Draw a ray.

**Step 2** Place the protractor's center on the endpoint. Line up the ray with the  $0^\circ$  mark.

**Step 3** Using the scale with the  $0^\circ$  mark, place a point at  $52^\circ$ .

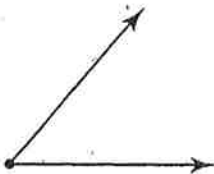
**Step 4** Draw the other ray.



$$\angle ABC = 52^\circ$$

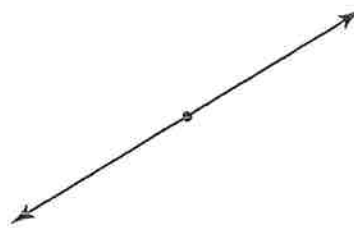
Classify each angle as acute, right, obtuse, or straight. Then measure the angle.

1.



\_\_\_\_\_

2.



\_\_\_\_\_

Draw an angle with each measure.

3.  $45^\circ$

4.  $120^\circ$



Name \_\_\_\_\_

**Review  
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## Adding and Subtracting Fractions

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

Find  $\frac{1}{4} - \frac{1}{5}$ .

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">3</td> <td style="padding: 2px 5px; border: 2px solid black;">6</td> <td style="padding: 2px 5px;">9</td> <td style="padding: 2px 5px;">12</td> <td style="padding: 2px 5px;">15</td> <td style="padding: 2px 5px;">Multiples of 3</td> </tr> <tr> <td style="padding: 2px 5px; border: 2px solid black;">6</td> <td style="padding: 2px 5px;">12</td> <td style="padding: 2px 5px;">18</td> <td style="padding: 2px 5px;">24</td> <td style="padding: 2px 5px;">30</td> <td style="padding: 2px 5px;">Multiples of 6</td> </tr> </table> <p style="margin-top: 10px;">The least common denominator is 6.</p> <p>Write equivalent fractions. <math>\frac{2}{3} = \frac{4}{6}</math></p> <p>Add. <math display="block">\begin{array}{r} + \frac{1}{6} = \frac{1}{6} \\ \hline \frac{5}{6} \end{array}</math></p>	3	6	9	12	15	Multiples of 3	6	12	18	24	30	Multiples of 6	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">4</td> <td style="padding: 2px 5px;">8</td> <td style="padding: 2px 5px;">12</td> <td style="padding: 2px 5px;">16</td> <td style="padding: 2px 5px; border: 2px solid black;">20</td> <td style="padding: 2px 5px;">Multiples of 4</td> </tr> <tr> <td style="padding: 2px 5px;">5</td> <td style="padding: 2px 5px;">10</td> <td style="padding: 2px 5px;">15</td> <td style="padding: 2px 5px; border: 2px solid black;">20</td> <td style="padding: 2px 5px;">25</td> <td style="padding: 2px 5px;">Multiples of 5</td> </tr> </table> <p style="margin-top: 10px;">The least common denominator is 20.</p> <p>Write equivalent fractions. <math>\frac{1}{4} = \frac{5}{20}</math></p> <p>Subtract. <math display="block">\begin{array}{r} - \frac{1}{5} = \frac{4}{20} \\ \hline \frac{1}{20} \end{array}</math></p>	4	8	12	16	20	Multiples of 4	5	10	15	20	25	Multiples of 5
3	6	9	12	15	Multiples of 3																				
6	12	18	24	30	Multiples of 6																				
4	8	12	16	20	Multiples of 4																				
5	10	15	20	25	Multiples of 5																				

Find each sum or difference.

1.  $\frac{1}{4} + \frac{2}{3} =$  \_\_\_\_\_

4			
3			

2.  $\frac{11}{12} - \frac{5}{6} =$  \_\_\_\_\_

12			
6			

3.  $\frac{1}{3} + \frac{4}{9} =$  \_\_\_\_\_


4.  $\frac{3}{7} + \frac{2}{7} =$  \_\_\_\_\_    5.  $\frac{11}{12} - \frac{5}{12} =$  \_\_\_\_\_    6.  $\frac{1}{2} + \frac{1}{3} =$  \_\_\_\_\_    7.  $\frac{1}{3} - \frac{1}{5} =$  \_\_\_\_\_

8.  $\frac{3}{8} - \frac{1}{6} =$  \_\_\_\_\_    9.  $\frac{3}{5} + \frac{3}{10} =$  \_\_\_\_\_    10.  $\frac{1}{2} + \frac{2}{5} =$  \_\_\_\_\_    11.  $\frac{2}{3} - \frac{1}{4} =$  \_\_\_\_\_

12. Meg practiced the piano for  $\frac{5}{12}$  hr. She did homework for  $\frac{3}{4}$  hr. How much longer did she do homework than she practiced the piano?

Name \_\_\_\_\_

# Adding Mixed Numbers

R 4-5

To add mixed numbers, you can add the fractional parts to the whole number parts, and then simplify.

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

The fractions have a common denominator. Add the fractions. Then add the whole numbers.

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

Find  $3\frac{2}{3} + 4\frac{1}{9}$ .

Write equivalent fractions with the LCD.

$$\begin{array}{r} 3\frac{2}{3} = 3\frac{6}{9} \\ + 4\frac{1}{9} = 4\frac{1}{9} \\ \hline \end{array}$$

Add the whole numbers.  
Add the fractions.  
Simplify if possible.

$$\begin{array}{r} 3\frac{6}{9} \\ + 4\frac{1}{9} \\ \hline 7\frac{7}{9} \end{array}$$

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

Add the whole numbers; then add the fraction.

$$\begin{array}{r} 4 \\ + 3\frac{3}{5} \\ \hline 7\frac{3}{5} \end{array}$$

Find each sum. Simplify your answer.

1.  $2\frac{1}{5} + 2\frac{3}{5} =$  \_\_\_\_\_ 2.  $4\frac{2}{3} + 1\frac{1}{6} =$  \_\_\_\_\_

3.  $5\frac{3}{5} + \frac{3}{10} =$  \_\_\_\_\_ 4.  $8\frac{5}{8} + 1\frac{5}{12} =$  \_\_\_\_\_

5.  $6\frac{1}{4} + 11\frac{3}{8} =$  \_\_\_\_\_ 6.  $7 + 8\frac{1}{3} =$  \_\_\_\_\_

7. In 2001, the men's indoor pole vault record was  $20\frac{1}{6}$  ft. The women's record for the indoor pole vault was  $15\frac{5}{12}$  ft. What is the combined height of the two records? \_\_\_\_\_

8. **Writing in Math** How high is a stack of library books if one book is  $1\frac{3}{8}$  in. high, the second book is  $1\frac{5}{6}$  in. high, and the third is  $2\frac{1}{3}$  in. high? Explain how you solved this problem.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6

Name \_\_\_\_\_

**Review  
12**

Subtract  $3\frac{2}{3} - 2\frac{1}{6}$ .

<p><i>Write equivalent fractions.</i></p> $\begin{array}{r} 3\frac{2}{3} = 3\frac{4}{6} \\ - 2\frac{1}{6} = 2\frac{1}{6} \\ \hline \end{array}$ <p>The LCD of 3 and 6 is 6.</p>	<p><i>Subtract the fractions.</i></p> $\begin{array}{r} 3\frac{2}{3} = 3\frac{4}{6} \\ - 2\frac{1}{6} = 2\frac{1}{6} \\ \hline 1\frac{3}{6} \\ \phantom{1}\frac{3}{6} \end{array}$	<p><i>Subtract the whole numbers. Simplify.</i></p> $\begin{array}{r} 3\frac{2}{3} = 3\frac{4}{6} \\ - 2\frac{1}{6} = 2\frac{1}{6} \\ \hline 1\frac{3}{6} = 1\frac{1}{2} \end{array}$
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Find each difference. Simplify.

1. 
$$\begin{array}{r} 3\frac{1}{3} = 3\frac{5}{15} \\ - 2\frac{1}{5} = 2\frac{3}{15} \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 2\frac{1}{3} = 2\frac{2}{6} \\ - 1\frac{1}{6} = 1\frac{1}{6} \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 3\frac{2}{3} \\ - 2\frac{1}{3} \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 6\frac{5}{8} \\ - 2\frac{1}{8} \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 3\frac{7}{10} \\ - 1\frac{2}{5} \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 7\frac{7}{8} \\ - 2\frac{3}{4} \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 3\frac{3}{4} \\ - 2\frac{1}{6} \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 5\frac{5}{6} \\ - 1\frac{1}{8} \\ \hline \end{array}$$

9.  $2\frac{2}{3} - 1\frac{1}{4} = \underline{\hspace{2cm}}$

10.  $4\frac{3}{4} - 4\frac{2}{5} = \underline{\hspace{2cm}}$

11.  $2\frac{1}{3} - 1\frac{2}{3} = \underline{\hspace{2cm}}$

12.  $4\frac{4}{9} - 3\frac{2}{3} = \underline{\hspace{2cm}}$

13.  $3\frac{3}{8} - 2\frac{5}{6} = \underline{\hspace{2cm}}$

14.  $5\frac{1}{3} - 2\frac{5}{8} = \underline{\hspace{2cm}}$

15. Greg found two rocks for his collection. One weighed  $4\frac{1}{4}$  lb and the other weighed  $2\frac{7}{8}$  lb. Find the difference in weights. \_\_\_\_\_

Name \_\_\_\_\_

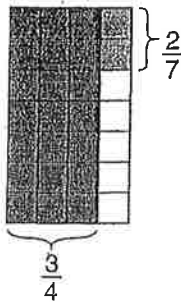
# Multiplying Fractions

R 5-2

Find  $\frac{3}{4} \times \frac{2}{7}$ .

### One Way

Draw a picture. Simplify if possible.



6 of the 28 squares have overlapping shading.

So,  $\frac{3}{4} \times \frac{2}{7} = \frac{6}{28}$ .

Simplify  $\frac{6}{28}$  to  $\frac{3}{14}$ .

### Another Way

Multiply the numerators and denominators. Simplify if possible.

$$\begin{aligned} & \frac{3}{4} \times \frac{2}{7} \\ &= \frac{3 \times 2}{4 \times 7} = \frac{6}{28} \\ &= \frac{3}{14} \end{aligned}$$

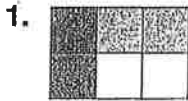
### Simplify First

Find the GCF of any numerator and any denominator.

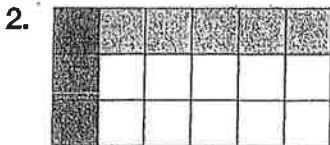
The GCF of 2 and 4 is 2. Divide 2 and 4 by the GCF.

$$\frac{3}{\cancel{4}^2} \times \frac{\cancel{2}^1}{7} = \frac{3}{14}$$

Write an equation for each picture.



\_\_\_\_\_



\_\_\_\_\_

Find each product. Simplify if possible.

3.  $\frac{6}{8} \times \frac{1}{3} =$  \_\_\_\_\_

4.  $\frac{5}{6} \times \frac{7}{10} =$  \_\_\_\_\_

5.  $\frac{4}{5} \times \frac{3}{8} =$  \_\_\_\_\_

6.  $\frac{1}{2} \times \frac{4}{9} =$  \_\_\_\_\_

7. **Number Sense** Can you simplify before multiplying  $14 \times \frac{25}{27}$ ? Explain.

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

# Multiplying Mixed Numbers

R 5-4

How to find the product of two mixed numbers:

Find  $3\frac{2}{3} \times 4\frac{1}{2}$ .

### Step 1

Estimate by rounding.

$$\begin{array}{r} 3\frac{2}{3} \times 4\frac{1}{2} \\ \downarrow \quad \downarrow \\ 4 \times 5 = 20 \end{array}$$

Then write each mixed number as an improper fraction.

$$\begin{array}{r} 3\frac{2}{3} \times 4\frac{1}{2} \\ \downarrow \quad \downarrow \\ \frac{11}{3} \times \frac{9}{2} \end{array}$$

### Step 2

Look for common factors and simplify.

$$\frac{11}{\cancel{3}^1} \times \frac{\cancel{9}^3}{2} = \frac{11}{1} \times \frac{3}{2}$$

### Step 3

Multiply. Write the product as a mixed number.

$$\frac{11}{1} \times \frac{3}{2} = \frac{33}{2} = 16\frac{1}{2}$$

$16\frac{1}{2}$  is close to 20, so the answer is reasonable.

Find each product. Simplify if possible.

1.  $2\frac{3}{4} \times 3\frac{1}{2} =$  \_\_\_\_\_

2.  $2\frac{1}{5} \times 2\frac{2}{3} =$  \_\_\_\_\_

3.  $6 \times 3\frac{1}{4} =$  \_\_\_\_\_

4.  $1\frac{2}{5} \times 3\frac{1}{4} =$  \_\_\_\_\_

5.  $4\frac{1}{2} \times 16 =$  \_\_\_\_\_

6.  $1\frac{3}{8} \times 2\frac{1}{2} =$  \_\_\_\_\_

7. **Number Sense** Is  $2 \times 17\frac{5}{6}$  greater than or less than 36? Explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

11

Name \_\_\_\_\_

**Review**  
**14**

### Problem Solving: Strategies

A computer store has 25 printers and computers. There are 7 more printers than computers. How many of each are there?

	Printers	Computers	Check
Guess 1	20	5	$20 - 5 = 1$
Guess 2	14	11	$14 - 11 = 3$
Guess 3	16	9	$16 - 9 = 7\checkmark$

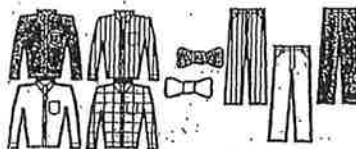
Solution: There are 16 printers and 9 computers.

#### Problem Solving Strategies

- Act It Out
- Draw a Picture
- Look For a Pattern
- **Try, Check, and Revise**
- Make an Organized List
- Make a Table
- Solve a Simpler Problem
- Work Backward

Use any strategy to solve.

1. At the veterinarian's office, Terri learned that her dog weighed 4 times as much as her cat. Together the pets weighed 40 lbs. How much did the dog weigh?  
\_\_\_\_\_
  
2. Yasmin arrived home from play practice at 4:25 P.M. The walk home took 15 minutes. Practice began 20 minutes after the final bell and lasted for a half hour. When did school end?  
\_\_\_\_\_
  
3. Vanessa, Diego, Rose and Randy stood in line for lunch. Rose was just behind Vanessa. Diego was not next to Rose or Randy. Write the line order.  
\_\_\_\_\_
  
4. Students played dodge ball and volleyball for 45 minutes. They played dodge ball for 11 more minutes than they played volleyball. How long did they play dodge ball?  
\_\_\_\_\_
  
5. Mr. Jones has 4 shirts, 2 ties, and 3 pair of pants. How many days in a row can he wear a different outfit?  
\_\_\_\_\_



14

Name \_\_\_\_\_

# Customary Measurement

R 10-1

## Units of Length

foot (ft)     1 ft = 12 in.  
yard (yd)     1 yd = 3 ft  
                  1 yd = 36 in.  
mile (mi)     1 mi = 5,280 ft  
                  1 mi = 1,760 yd

## Units of Capacity

cup (c)        1 c = 8 fluid ounces (oz)  
pint (pt)      1 pt = 2 c  
quart (qt)     1 qt = 2 pt  
gallon (gal)   1 gal = 4 qt

### How to change from one unit of measurement to another:

To change from larger units to smaller units in the customary system, you have to multiply.

120 yd = \_\_\_\_\_ ft  
1 yd = 3 ft  
 $120 \times 3 \text{ ft} = 360 \text{ ft}$   
120 yd = 360 ft

To change from smaller units to larger ones, you have to divide.

256 oz = \_\_\_\_\_ c  
1 c = 8 oz  
 $256 \div 8 = 32$   
256 oz = 32 c

Complete.

1. 36 in. = \_\_\_\_\_ ft
  2. 4 qt = \_\_\_\_\_ c
  3. 5 lb = \_\_\_\_\_ oz
  4. 39 ft = \_\_\_\_\_ yd
  5. 1.5 mi = \_\_\_\_\_ ft
  6. 3.5 gal = \_\_\_\_\_ qt
  7. 2 T = \_\_\_\_\_ lb
  8. 16 pt = \_\_\_\_\_ qt
  9. 64 oz = \_\_\_\_\_ lb
  10. 3 yd = \_\_\_\_\_ in.
  11. 4 gal = \_\_\_\_\_ pt
  12. 55 yd = \_\_\_\_\_ ft
  13. 6.5 lb = \_\_\_\_\_ oz
  14. 20 pt = \_\_\_\_\_ gal
  15. 4.5 qt = \_\_\_\_\_ c
  16. 205 yd = \_\_\_\_\_ ft
17. **Reasoning** A vendor at a festival sells soup for \$1.25 per cup or \$3.75 per quart. Which is the better buy?
- \_\_\_\_\_

13

Name \_\_\_\_\_

# Metric Measurement

R 10-2

## Changing from one metric unit to another:

To change from a larger unit to a smaller unit, multiply by a power of ten.

$$3.8 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$$

A liter is a larger unit than a milliliter. To change from liters to milliliters, multiply.

$$1 \text{ L} = 1,000 \text{ mL}$$

$$3.8 \times 1,000 = 3,800$$

$$3.8 \text{ L} = 3,800 \text{ mL}$$

To change from a smaller unit to a larger unit, divide by a power of ten.

$$100 \text{ m} = \underline{\hspace{2cm}} \text{ km}$$

The meter is a smaller unit than the kilometer. To change from meters to kilometers, divide.

$$1,000 \text{ m} = 1 \text{ km}$$

$$100 \div 1000 = 0.1$$

$$100 \text{ m} = 0.1 \text{ km}$$

Name the most appropriate metric unit for each measurement.

1. mass of a cow

2. length of a carrot

3. capacity of a thimble

\_\_\_\_\_

Complete.

4.  $45 \text{ g} = \underline{\hspace{2cm}} \text{ mg}$

5.  $3450 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$

6.  $4.5 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$

7.  $1.68 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

8.  $28 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$

9.  $7,658 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

10.  $600 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$

11.  $5,000 \text{ mg} = \underline{\hspace{2cm}} \text{ g}$

12.  $5.1 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

13.  $1.780 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

14.  $0.780 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

15.  $4,300 \text{ m} = \underline{\hspace{2cm}} \text{ km}$

16.  $9,000 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$

17.  $8,000 \text{ mg} = \underline{\hspace{2cm}} \text{ g}$

18. **Reasoning** It is recommended that people have 1 g of calcium each day. How many milligrams of calcium is that?

\_\_\_\_\_

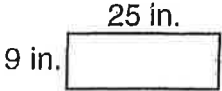

14

Name \_\_\_\_\_

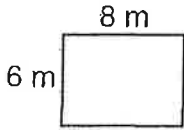
**Review  
16**

# Perimeter

**Perimeter** is the distance around a shape.

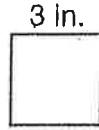
<p>You can add the lengths of all the sides or you can multiply the sum of the length and the width by 2 to find the perimeter of a rectangle.</p> <div style="text-align: center;">  </div> <p><math>p = 25 \text{ in.} + 9 \text{ in.} + 25 \text{ in.} + 9 \text{ in.} = 68 \text{ in.}</math>  <b>or</b> <math>p = 2 \times (25 \text{ in.} + 9 \text{ in.}) = 68 \text{ in.}</math></p>	<p>If only one side of a figure is given, then all sides have the same length.</p> <div style="text-align: center;">  </div> <p><math>p = 5 \text{ cm} + 5 \text{ cm} + 5 \text{ cm} + 5 \text{ cm} = 20 \text{ cm}</math>  <b>or</b> <math>p = 4 \times 5 \text{ cm} = 20 \text{ cm}</math></p>
---	---

1. Find the perimeter of the rectangle.



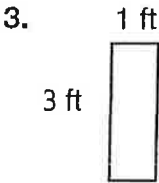
$p = \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ m}$

2. Find the perimeter of the square.

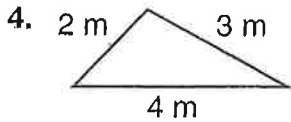


$p = \underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ in.}$

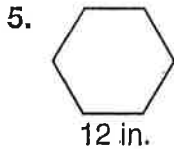
Find the perimeter of each figure.



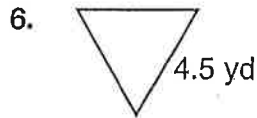
\_\_\_\_\_



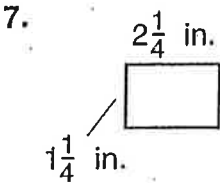
\_\_\_\_\_



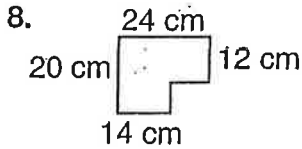
\_\_\_\_\_



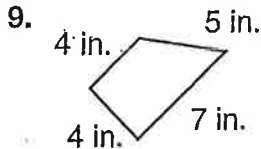
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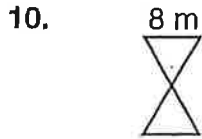
\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

11. A flower garden is in the shape of an equilateral triangle. Each side measures  $15\frac{3}{8}$  ft. What is the garden's perimeter? \_\_\_\_\_

15

Name \_\_\_\_\_

# Area of Squares and Rectangles

R 10-8

You can use formulas to find the area of a square or rectangle.

Find the area of a square that is 7.2 m on each side.

Use the formula  $A = s^2$ .

$$A = (7.2)^2$$

$$A = 51.84$$

The area is 51.84 m<sup>2</sup>.

Find the area of a rectangle with a length ( $l$ ) of 4 cm and a width ( $w$ ) of 12 cm.

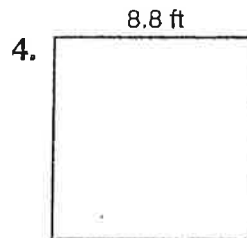
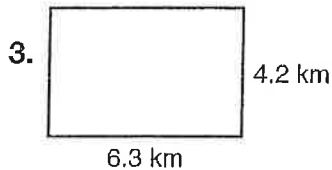
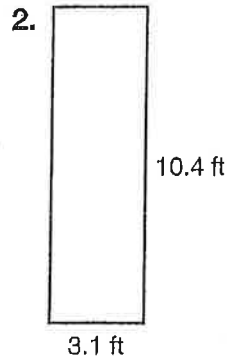
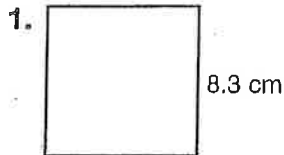
Use the formula  $A = l \times w$ .

$$A = 4 \times 12$$

$$A = 48$$

The area is 48 cm<sup>2</sup>.

Find the area of each figure.



5. **Reasoning** What is the length of a rectangle that has an area of 120 ft<sup>2</sup> and a width of 8 ft? \_\_\_\_\_

6. **Number Sense** What is the area of a square that is 12.4 cm on each side? \_\_\_\_\_

16

Name \_\_\_\_\_

**Review  
18**

## Ratio and Proportion

You can use **ratios** to compare two quantities.



2 balloons to 3 sticks

You can write ratios as:

words      2 to 3

with a colon   2:3

as a fraction    $\frac{2}{3}$

A statement that two ratios are equal is called a **proportion**.



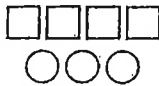
$$\frac{1 \text{ balloon}}{2 \text{ sticks}} = \frac{2 \text{ balloons}}{4 \text{ sticks}}$$

$$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$$

$\frac{1}{2} = \frac{2}{4}$  is a proportion.

Write each ratio. Use words, a colon, or a fraction.

1. Write the ratio of squares to circles.



\_\_\_\_\_

2. The Computer Club has 20 girls and 15 boys. Write the ratio of girls to boys in the club.

\_\_\_\_\_

Tell if the ratios form a proportion. Write yes or no.

3.  $\frac{3}{4}$   $\frac{9}{12}$  \_\_\_\_\_

4.  $\frac{1}{3}$   $\frac{2}{9}$  \_\_\_\_\_

5.  $\frac{3}{5}$   $\frac{6}{10}$  \_\_\_\_\_

6.  $\frac{4}{6}$   $\frac{8}{18}$  \_\_\_\_\_

Complete each table so that all ratios are equal.

7.

3	6	9	12
5			

8.

2			
7	21	42	63

9.

4		20	
5	10		50

10. The ratio of the width to the length of a painting is 3 to 7. If the painting is 42 in. long, how wide is it?

\_\_\_\_\_

11. The ratio of the number of moons the planet Neptune has to the number that Saturn has is 4 to 9. Saturn has 18 moons. How many moons does Neptune have?

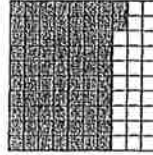
\_\_\_\_\_

Name \_\_\_\_\_

# Fractions, Decimals, and Percents

R 7-2

Fractions, decimals, and percents all name parts of a whole. The grid to the right has 72 out of 100 squares shaded.



72 out of 100 are shaded. As a fraction, that is  $\frac{72}{100}$ .  
As a decimal, that is 0.72. As a percent, that is 72%.

Write 40% as a fraction and decimal.

$$40\% = \frac{40}{100} = 0.40$$

The decimal point moves two places to the left.

Write 0.47 as a fraction and percent.

$$0.47 = \frac{47}{100} = 47\%$$

Write 0.3% as a fraction and decimal.

$$0.3\% = \frac{0.3}{100} = 0.003$$

The decimal point moves two places to the left. Fill in any spaces with zeros.

Write  $\frac{3}{4}$  as a decimal and percent.

You can use a proportion:

$$\frac{3}{4} = \frac{n}{100}$$

$$\frac{4n}{4} = \frac{300}{4}$$

$$n = 75$$

$$\text{So, } \frac{3}{4} = 0.75 = 75\%.$$

Write each in two other ways.

1.  $\frac{2}{10}$  \_\_\_\_\_; \_\_\_\_\_

2.  $\frac{23}{100}$  \_\_\_\_\_; \_\_\_\_\_

3.  $\frac{7}{10}$  \_\_\_\_\_; \_\_\_\_\_

4. 97% \_\_\_\_\_; \_\_\_\_\_

5. 16% \_\_\_\_\_; \_\_\_\_\_

6. 52% \_\_\_\_\_; \_\_\_\_\_

7. 0.04 \_\_\_\_\_; \_\_\_\_\_

8. 0.35 \_\_\_\_\_; \_\_\_\_\_

9. **Number Sense** Sheila got 87% of the problem correct.  
Patrick got  $\frac{91}{100}$  correct. Who scored higher? \_\_\_\_\_

18

Name \_\_\_\_\_

**Review  
20**

**Probability**

<p>What is the probability of spinning an A?</p>		<p>What is the probability of spinning a B?</p>
<p><math>\frac{2}{4}</math> ← number of As <math>\frac{4}{4}</math> ← total possible outcomes</p>		<p><math>\frac{1}{4}</math> ← number of Bs <math>\frac{4}{4}</math> ← total possible outcomes</p>
<p>The probability is <math>\frac{2}{4}</math> or <math>\frac{1}{2}</math>.</p>		<p>The probability is <math>\frac{1}{4}</math>.</p>

Complete.

1. What is the probability of spinning a 1?

← number of 1s

← total possible outcomes



The probability is \_\_\_\_\_.

2. What is the probability of spinning a 3?

← number of 3s

← total possible outcomes

The probability is \_\_\_\_\_.

Give the probability of each outcome.



3. spinning an N \_\_\_\_\_

4. spinning an S \_\_\_\_\_

5. spinning an S or G \_\_\_\_\_

6. spinning an S, G, or N \_\_\_\_\_

A number cube has 6 sides numbered 1, 2, 3, 4, 5, and 6. Find each probability.

7. rolling a 3 \_\_\_\_\_

8. rolling an even number \_\_\_\_\_

9. rolling 3, 4, 5, or 6 \_\_\_\_\_

10. rolling anything but 1 \_\_\_\_\_

11. A hat contains 26 cards, each printed with a different letter of the alphabet. What is the probability that you will pick a vowel (A, E, I, O, U, or Y)?

\_\_\_\_\_

12. There are 6 blue socks, 7 white socks, and 8 gray socks in a drawer. If you pick a sock without looking, what is the probability that it will be blue?

\_\_\_\_\_

## Answers and Options for Further Review

### REVIEW 1

If students need more help on adding and subtracting whole numbers, use F36 and F37 in the Math Diagnosis and Intervention System.

- |               |        |           |        |
|---------------|--------|-----------|--------|
| 1. 201        | 2. 615 | 3. 1,109  | 4. 179 |
| 5. 198        | 6. 980 | 7. 564    | 8. 90  |
| 9. 31         |        | 10. 109   |        |
| 11. 279       |        | 12. 221   |        |
| 13. 588       |        | 14. 1,301 |        |
| 15. 1,296     |        | 16. 2,109 |        |
| 17. 491 cards |        |           |        |

### REVIEW 2

If students need more help on adding and subtracting decimals, use I17 in the Math Diagnosis and Intervention System.

- |              |            |
|--------------|------------|
| 1. 15.95     | 2. 11.05   |
| 3. 780.2     | 4. 8.4     |
| 5. 74.97     | 6. 99.78   |
| 7. 244.09    | 8. 0.27    |
| 9. 7.4       | 10. 0.46   |
| 11. 5.44     | 12. 127.41 |
| 13. 530.05   | 14. 112.91 |
| 15. 829.2 mi | 16. \$5.21 |

### REVIEW 3

If students need more help on multiplying whole numbers, use G59 in the Math Diagnosis and Intervention System.

- |        |          |
|--------|----------|
| 1. 646 | 2. 2,408 |
| 3. 328 | 4. 1,196 |

- |               |              |
|---------------|--------------|
| 5. 9,072      | 6. 7,770     |
| 7. 39,195     | 8. 74,304    |
| 9. 5,940      | 10. 8,800    |
| 11. 20,979    | 12. 49,680   |
| 13. 440       | 14. 640      |
| 15. 3,620     | 16. 4,896 lb |
| 17. 504 miles |              |

### REVIEW 4

If students need more help on multiplying decimals, use I20 through I23 in the Math Diagnosis and Intervention System.

- |                 |             |
|-----------------|-------------|
| 1. 123.2        | 2. 14.4     |
| 3. 1.28         | 4. 0.015    |
| 5. 17.845       | 6. 0.396    |
| 7. 2.142        | 8. 17.55    |
| 9. 10.81        | 10. 4.5     |
| 11. 378         | 12. 0.088   |
| 13. 404         | 14. 1.47    |
| 15. 2,187.5 in. | 16. \$59.97 |

### REVIEW 5

If students need more help on dividing whole numbers, use G52, G54, G66, and G67 in the Math Diagnosis and Intervention System.

- |                        |         |
|------------------------|---------|
| 1. 19                  | 2. 66   |
| 3. 83                  | 4. 226  |
| 5. 319                 | 6. 35   |
| 7. 47                  | 8. 35   |
| 9. 58                  | 10. 83  |
| 11. 40                 | 12. 145 |
| 13. 102                | 14. 365 |
| 15. 19 points per game |         |

20

### REVIEW 6

If students need more help on dividing decimals, use I26 in the Math Diagnosis and Intervention System.

- |                     |               |
|---------------------|---------------|
| 1. 2.3              | 2. 21.9       |
| 3. 15.7             | 4. 77.7       |
| 5. 95.6             | 6. 9.4        |
| 7. 6.7              | 8. 4.89       |
| 9. 33.64            | 10. 77.89     |
| 11. 48.47           | 12. 17.89     |
| 13. \$3.79 per roll | 14. 12.36 sec |

### REVIEW 7

If students need more help on problem solving, use M10 and M12 in the Math Diagnosis and Intervention System.

1. division; 33 teams
2. addition; 450.25 lb
3. subtraction; \$48.05
4. division; \$0.60 per minute
5. multiplication; \$4.74

### REVIEW 8

If students need more help on interpreting data, use L3, L5, and L25 in the Math Diagnosis and Intervention System.

1. 2 archers
2. 2 bull's eyes
3. April
4. March
5. 1st and 5th
6. About \$1,600–\$1,700

### REVIEW 9

If students need more help on lines and angles, use K46 and K49 in the Math Diagnosis and Intervention System.

- |                                   |                 |
|-----------------------------------|-----------------|
| 1. intersecting and perpendicular | 3. intersecting |
| 2. parallel                       | 5. obtuse       |
| 4. straight                       | 7. right        |
| 6. acute                          | 9. right        |
| 8. obtuse                         | 11. acute       |
| 10. straight                      |                 |

### REVIEW 10

If students need more help on adding and subtracting fractions, use H29 and H31 in the Math Diagnosis and Intervention System.

- |                    |                        |
|--------------------|------------------------|
| 1. $\frac{11}{12}$ | 2. $\frac{1}{12}$      |
| 3. $\frac{7}{9}$   | 4. $\frac{5}{7}$       |
| 5. $\frac{1}{2}$   | 6. $\frac{5}{6}$       |
| 7. $\frac{2}{15}$  | 8. $\frac{5}{24}$      |
| 9. $\frac{9}{10}$  | 10. $\frac{9}{10}$     |
| 11. $\frac{5}{12}$ | 12. $\frac{1}{3}$ hour |

**REVIEW 15**

If students need more help on measurement, use K2 and K6 through K10 in the Math Diagnosis and Intervention System.

1. 108
2. 5
3. 300
4.  $\frac{1}{2}$
5. 100
6. 40,000
7. 5,000
8. 2,640
9. 104
10. 4,300
11. 25,000
12.  $1\frac{2}{3}$
13. 6.7
14. Yes, by 1.2 oz

**REVIEW 16**

If students need more help on perimeter, use K26 in the Math Diagnosis and Intervention System.

1. 28
2. 12
3. 8 ft
4. 9 m
5. 72 in.
6. 13.5 yd
7. 7 in.
8. 88 cm
9. 20 in.
10. 48 m
11.  $46\frac{1}{8}$  ft

**REVIEW 17**

If students need more help on area, use K25 and K28 through K30 in the Math Diagnosis and Intervention System.

1.  $63 \text{ in}^2$
2.  $5 \text{ ft}^2$
3.  $72 \text{ m}^2$
4.  $32 \text{ in}^2$
5.  $46.5 \text{ cm}^2$
6.  $6\frac{1}{4} \text{ ft}^2$
7.  $40 \text{ in}^2$
8.  $180 \text{ mm}^2$
9.  $4.5 \text{ yd}^2$
10.  $25 \text{ ft}^2$
11.  $75,000 \text{ yd}^2$

**REVIEW 18**

If students need more help on ratio and proportion, use I30 and I31 in the Math Diagnosis and Intervention System.

1.  $\frac{4}{3}$
2.  $\frac{4}{3}$
3. yes
4. no
5. yes
6. no

7.

3	6	9	12
5	10	15	20

8.

2	6	12	18
7	21	42	63

9.

4	8	20	40
5	10	25	50

10. 18 in.
11. 8 moons

**REVIEW 19**

If students need more help on percents, use I36 in the Math Diagnosis and Intervention System.

1. 6
2. 15
3.  $\frac{1}{2}$
4.  $\frac{3}{4}$
5.  $\frac{1}{10}$
6.  $\frac{3}{5}$
7. 0.45
8. 0.16
9. 0.78
10. 0.04
11. 8
12. 4
13. 3
14. 6.3
15. 3.5
16. 116
17. 40 students
18. 38 problems

**REVIEW 20**

If students need more help on probability, use L18 in the Math Diagnosis and Intervention System.

1.  $\frac{3}{8}$
2.  $\frac{1}{4}$
3.  $\frac{1}{3}$
4.  $\frac{1}{2}$
5.  $\frac{2}{3}$
6. 1
7.  $\frac{1}{6}$
8.  $\frac{1}{2}$
9.  $\frac{2}{3}$
10.  $\frac{5}{6}$
11.  $\frac{3}{13}$
12.  $\frac{2}{7}$

72  
0.02

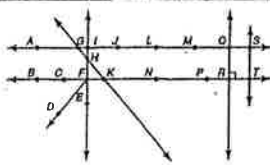
# Reteaching

Name \_\_\_\_\_

## Geometric Ideas

R 9-1

- A line is a straight path of points that goes on forever in two directions. Examples:  $\overleftrightarrow{AS}$ ,  $\overleftrightarrow{GX}$ .
- A ray is a part of a line with one endpoint, extending forever in only one direction. Example:  $\overrightarrow{FD}$ ,  $\overrightarrow{FB}$ .
- A line segment is part of a line with two endpoints. Examples:  $\overline{CF}$ ,  $\overline{NO}$ .
- A midpoint is the point halfway between the endpoints of a line segment. Example: Point  $I$  is halfway between points  $J$  and  $M$  on  $\overline{JM}$ .
- Congruent line segments are line segments that have the same length. Example:  $\overline{GH}$  is congruent to  $\overline{ST}$ .
- Parallel lines are in the same plane but do not intersect. Example:  $\overleftrightarrow{AS}$  is parallel to  $\overleftrightarrow{BT}$ .



Use the diagram at the right. Name the following. **Sample answers:**

1. three line segments

$\overline{EH}$ ,  $\overline{JB}$ ,  $\overline{BI}$

2. two parallel lines

$\overleftrightarrow{CU}$ ,  $\overleftrightarrow{DT}$

3. two lines that intersect  $\overleftrightarrow{DT}$

$\overleftrightarrow{GL}$ ,  $\overleftrightarrow{FK}$

4. two congruent line segments

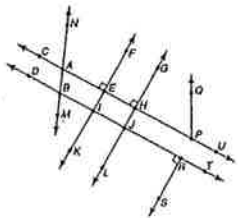
$\overline{EH}$ ,  $\overline{IJ}$

5. two lines perpendicular to  $\overline{BF}$

$\overline{FK}$ ,  $\overline{GL}$

6. two midpoints of line segments

$B$  on  $\overline{DI}$ ,  $I$  on  $\overline{BJ}$



Use with Lesson 9-1. 101

# Reteaching

Name \_\_\_\_\_

## Fractions, Decimals, and Percents

R 7-2

Fractions, decimals, and percents all name parts of a whole. The grid to the right has 72 out of 100 squares shaded.



72 out of 100 are shaded. As a fraction, that is  $\frac{72}{100}$ . As a decimal, that is 0.72. As a percent, that is 72%.

Write 40% as a fraction and decimal.

$$40\% = \frac{40}{100} = 0.40$$

The decimal point moves two places to the left.

Write 0.47 as a fraction and percent.

$$0.47 = \frac{47}{100} = 47\%$$

Write 0.3% as a fraction and decimal.

$$0.3\% = \frac{0.3}{100} = 0.003$$

The decimal point moves two places to the left. Fill in any spaces with zeros.

Write  $\frac{3}{4}$  as a decimal and percent.

You can use a proportion:

$$\frac{3}{4} = \frac{n}{100}$$

$$\frac{4n}{4} = \frac{300}{4}$$

$$n = 75$$

$$\text{So, } \frac{3}{4} = 0.75 = 75\%$$

Write each in two other ways.

1.  $\frac{20}{100}$     **0.20**    **20%**

3.  $\frac{70}{100}$     **0.7**    **70%**

5. 16%    **0.16**     $\frac{16}{100}$

7. 0.04    **4%**     $\frac{4}{100}$

2.  $\frac{23}{100}$     **0.23**    **23%**

4. 97%     $\frac{97}{100}$     **0.97**

6. 52%    **0.52**     $\frac{52}{100}$

8. 0.35    **35%**     $\frac{35}{100}$

9. **Number Sense** Sheila got 87% of the problem correct. Patrick got  $\frac{87}{100}$  correct. Who scored higher?

**Patrick**

Use with Lesson 7-2. 77

# Reteaching

Name \_\_\_\_\_

## Multiplying Mixed Numbers

R 8-4

How to find the product of two mixed numbers:

Find  $3\frac{2}{3} \times 4\frac{1}{2}$ .

**Step 1**  
Estimate by rounding.

$$3\frac{2}{3} \times 4\frac{1}{2} \approx 4 \times 5 = 20$$

Then write each mixed number as an improper fraction.

$$3\frac{2}{3} \times 4\frac{1}{2} = \frac{11}{3} \times \frac{9}{2}$$

**Step 2**  
Look for common factors and simplify.

$$\frac{11}{3} \times \frac{9}{2} = \frac{11}{1} \times \frac{3}{2}$$

**Step 3**  
Multiply. Write the product as a mixed number.

$$\frac{11}{1} \times \frac{3}{2} = \frac{33}{2} = 16\frac{1}{2}$$

$16\frac{1}{2}$  is close to 20, so the answer is reasonable.

Find each product. Simplify if possible.

1.  $2\frac{2}{3} \times 3\frac{1}{2} = \frac{9}{8}$

2.  $2\frac{1}{3} \times 2\frac{2}{3} = \frac{5}{15}$

3.  $8 \times 3\frac{1}{2} = \frac{19}{2}$

4.  $1\frac{2}{3} \times 3\frac{1}{2} = \frac{4}{20}$

5.  $4\frac{1}{2} \times 16 = \frac{72}{1}$

6.  $1\frac{2}{3} \times 2\frac{1}{2} = \frac{3}{16}$

7. **Number Sense** Is  $2 \times 17\frac{5}{6}$  greater than or less than 36? Explain. **Less, because  $2 \times 18 = 36$ .  $17\frac{5}{6}$  is less than 18, so the product is less than 36.**

Use with Lesson 8-4. 57

# Reteaching

Name \_\_\_\_\_

## Adding Mixed Numbers

R 4-5

To add mixed numbers, you can add the fractional parts to the whole number parts, and then simplify.

Find  $2\frac{2}{3} + 3\frac{1}{3}$ .

The fractions have a common denominator. Add the fractions. Then add the whole numbers.

$$2\frac{2}{3}$$

$$+ 3\frac{1}{3}$$

$$\hline 5\frac{3}{3}$$

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

Write equivalent fractions with the LCD.

$$3\frac{2}{3} = 3\frac{6}{9}$$

$$+ 4\frac{1}{3} = 4\frac{3}{9}$$

$$\hline 7\frac{9}{9}$$

Add the whole numbers. Add the fractions. Simplify if possible.

$$3\frac{6}{9}$$

$$+ 4\frac{3}{9}$$

$$\hline 7\frac{9}{9}$$

Find  $4 + 3\frac{2}{3}$ .

Add the whole numbers; then add the fraction.

$$4$$

$$+ 3\frac{2}{3}$$

$$\hline 7\frac{2}{3}$$

Find each sum. Simplify your answer.

1.  $2\frac{2}{3} + 2\frac{2}{3} = \frac{4}{8}$

2.  $4\frac{2}{3} + 1\frac{1}{3} = \frac{5}{6}$

3.  $5\frac{2}{3} + \frac{1}{3} = \frac{5}{10}$

4.  $8\frac{2}{3} + 1\frac{1}{3} = \frac{10}{24}$

5.  $8\frac{1}{2} + 11\frac{1}{2} = \frac{17}{8}$

6.  $7 + 8\frac{1}{3} = \frac{15}{3}$

7. In 2001, the men's indoor pole vault record was  $20\frac{1}{4}$  ft. The women's record for the indoor pole vault was  $15\frac{1}{2}$  ft. What is the combined height of the two records?  **$35\frac{7}{12}$  ft**

8. **Writing in Math** How high is a stack of library books if one book is  $1\frac{1}{2}$  in. high, the second book is  $1\frac{1}{2}$  in. high, and the third is  $2\frac{1}{2}$  in. high? Explain how you solved this problem.  **$5\frac{2}{4}$  in.; You need to find the LCD to solve this problem.**

Use with Lesson 4-5. 49

## Reteaching

Name \_\_\_\_\_

### Area of Squares and Rectangles

R 10-8

You can use formulas to find the area of a square or rectangle.

Find the area of a square that is 7.2 m on each side.

Use the formula  $A = s^2$ .

$$A = (7.2)^2$$

$$A = 51.84$$

The area is 51.84 m<sup>2</sup>.

Find the area of a rectangle with a length ( $l$ ) of 4 cm and a width ( $w$ ) of 12 cm.

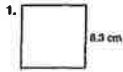
Use the formula  $A = l \times w$ .

$$A = 4 \times 12$$

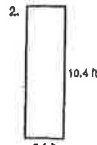
$$A = 48$$

The area is 48 cm<sup>2</sup>.

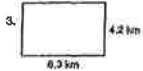
Find the area of each figure.



$$68.89 \text{ cm}^2$$



$$32.24 \text{ ft}^2$$



$$26.46 \text{ km}^2$$



$$77.44 \text{ ft}^2$$

5. Reasoning What is the length of a rectangle that has an area of 120 ft<sup>2</sup> and a width of 8 ft?

$$15 \text{ ft}$$

6. Number Sense What is the area of a square that is 12.4 cm on each side?

$$153.76 \text{ cm}^2$$

Use with Lesson 10-4. 123

## Reteaching

Name \_\_\_\_\_

### Customary Measurement

R 10-1

Units of Length

foot (ft) 1 ft = 12 in.

yard (yd) 1 yd = 3 ft

1 yd = 36 in.

mile (mi) 1 mi = 5,280 ft

1 mi = 1,760 yd

Units of Capacity

cup (c) 1 c = 8 fluid ounces (oz)

pint (pt) 1 pt = 2 c

quart (qt) 1 qt = 2 pt

gallon (gal) 1 gal = 4 qt

How to change from one unit of measurement to another:

To change from larger units to smaller units in the customary system, you have to multiply.

$$120 \text{ yd} = \underline{\hspace{2cm}} \text{ ft}$$

$$1 \text{ yd} = 3 \text{ ft}$$

$$120 \times 3 \text{ ft} = 360 \text{ ft}$$

$$120 \text{ yd} = 360 \text{ ft}$$

To change from smaller units to larger ones, you have to divide.

$$256 \text{ oz} = \underline{\hspace{2cm}} \text{ c}$$

$$1 \text{ c} = 8 \text{ oz}$$

$$256 \div 8 = 32$$

$$256 \text{ oz} = 32 \text{ c}$$

Complete.

1. 36 in. = 3 ft

3. 6 lb = 80 oz

5. 1.5 ml = 7,920 ft

7. 2 T = 4,000 lb

9. 64 oz = 4 lb

11. 4 gal = 32 pt

13. 6.5 lb = 104 oz

15. 4.5 qt = 18 c

2. 4 qt = 16 c

4. 39 ft = 13 yd

6. 3.5 gal = 14 qt

8. 16 pt = 8 qt

10. 3 yd = 108 in.

12. 55 yd = 165 ft

14. 20 pt = 2.5 gal

16. 205 yd = 615 ft

17. Reasoning A vendor at a festival sells soup for \$1.25 per cup or \$3.75 per quart. Which is the better buy?

**\$3.75 per quart is the better buy.**

116 Use with Lesson 10-1.

## Reteaching

Name \_\_\_\_\_

### Metric Measurement

R 10-2

Changing from one metric unit to another:

To change from a larger unit to a smaller unit, multiply by a power of ten.

$$3.8 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$$

A liter is a larger unit than a milliliter. To change from liters to milliliters, multiply.

$$1 \text{ L} = 1,000 \text{ mL}$$

$$3.8 \times 1,000 = 3,800$$

$$3.8 \text{ L} = 3,800 \text{ mL}$$

To change from a smaller unit to a larger unit, divide by a power of ten.

$$100 \text{ m} = \underline{\hspace{2cm}} \text{ km}$$

The meter is a smaller unit than the kilometer. To change from meters to kilometers, divide.

$$1,000 \text{ m} = 1 \text{ km}$$

$$100 \div 1000 = 0.1$$

$$100 \text{ m} = 0.1 \text{ km}$$

Name the most appropriate metric unit for each measurement.

1. mass of a cow

kg

2. length of a carrot

cm

3. capacity of a thimble

mL

Complete.

4. 45 g = 45,000 mg

6. 4.5 m = 4,500 mm

8. 28 cm = 280 mm

10. 600 cm = 6 m

12. 5.1 km = 5,100 m

14. 0.780 L = 780 mL

16. 9,000 cm = 90 m

5. 3460 mL = 3.45 L

7. 1.68 L = 1,680 mL

9. 7,658 g = 7.658 kg

11. 5,000 mg = 5 g

13. 1.780 L = 1,780 mL

15. 4,300 m = 4.3 km

17. 8,000 mg = 8 g

18. Reasoning It is recommended that people have 1 g of calcium each day. How many milligrams of calcium is that?

1,000 mg

Use with Lesson 10-2. 117

## Reteaching

Name \_\_\_\_\_

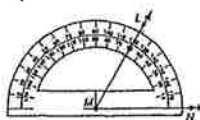
### Measuring and Drawing Angles

R 9-2

How to measure an angle:

Step 1 Place the protractor's center on the angle's vertex.

Step 2 Place the 0° mark on one side of the angle.



$\angle MN = 60^\circ$

Step 3 Use the scale's beginning with the 0° mark to read the measurement where the other side of the angle crosses the protractor.

How to draw an angle:

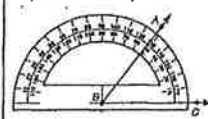
Draw an angle of 52°.

Step 1 Draw a ray.

Step 2 Place the protractor's center on the endpoint. Line up the ray with the 0° mark.

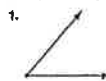
Step 3 Using the scale with the 0° mark, place a point at 52°.

Step 4 Draw the other ray.



$\angle ABC = 52^\circ$

Classify each angle as acute, right, obtuse, or straight. Then measure the angle.



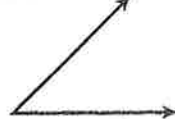
Acute; 50°



Straight; 180°

Draw an angle with each measure.

3. 45°



4. 120°



102 Use with Lesson 9-2.

## Reteaching

Name \_\_\_\_\_

### Area of Squares and Rectangles

R 10-8

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Use the formula  $A = l \times w$ .

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$$A = 48$$

The area is 48 cm<sup>2</sup>.

Find the area of each figure.

1.



$$68.89 \text{ cm}^2$$

2.



$$32.24 \text{ ft}^2$$

3.



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4.



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Use with Lesson 10-4. 123

## Reteaching

Name \_\_\_\_\_

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**\$3.75 per quart is the better buy.**

116 Use with Lesson 10-1.

## Reteaching

Name \_\_\_\_\_

### Metric Measurement

R 10-2

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To change from a smaller unit to a larger unit, divide by a power of ten.

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Use with Lesson 10-2. 117

## Reteaching

Name \_\_\_\_\_

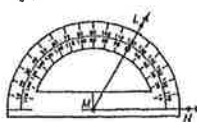
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R 9-2

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$\angle M = 60^\circ$

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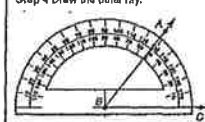
How to draw an angle:

Step 1 Draw a ray.

Step 2 Place the protractor's center on the endpoint. Line up the ray with the 0° mark.

Step 3 Using the scale with the 0° mark, place a point at 52°.

Step 4 Draw the other ray.



$\angle ABC = 52^\circ$

Classify each angle as acute, right, obtuse, or straight. Then measure the angle.

1.



Acute; 50°

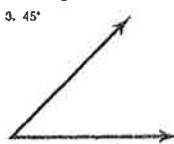
2.



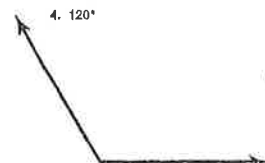
Straight; 180°

Draw an angle with each measure.

3. 45°



4. 120°



102 Use with Lesson 9-2.

23

# Reteaching

Name \_\_\_\_\_

## Multiplying Fractions

R 5-2

Find  $\frac{3}{4} \times \frac{2}{7}$ .

### One Way

Draw a picture. Simplify if possible.



6 of the 28 squares have overlapping shading.

So,  $\frac{3}{4} \times \frac{2}{7} = \frac{6}{28}$

Simplify  $\frac{6}{28}$  to  $\frac{3}{14}$ .

### Another Way

Multiply the numerators and denominators. Simplify if possible.

$$\begin{aligned} \frac{3}{4} \times \frac{2}{7} &= \frac{3 \times 2}{4 \times 7} = \frac{6}{28} \\ &= \frac{3}{14} \end{aligned}$$

### Simplify First

Find the GCF of any numerator and any denominator.

The GCF of 2 and 4 is 2. Divide 2 and 4 by the GCF.

$$\frac{3}{4} \times \frac{2}{7} = \frac{3}{2} \times \frac{1}{7} = \frac{3}{14}$$

Write an equation for each picture.



$$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$$



$$\frac{1}{6} \times \frac{1}{3} = \frac{1}{18}$$

Find each product. Simplify if possible.

3.  $\frac{2}{3} \times \frac{1}{4} = \frac{2}{12} = \frac{1}{6}$

4.  $\frac{3}{5} \times \frac{7}{10} = \frac{21}{50}$

5.  $\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$

6.  $\frac{1}{2} \times \frac{2}{3} = \frac{2}{6} = \frac{1}{3}$

7. Number Sense Can you simplify before multiplying  $14 \times \frac{2}{3}$ ? Explain.

**No, because there is no common factor to divide by**

26