Name ______________________________

• Multiplying Decimal Numbers by 10, by 100, and by 1000

- To multiply by 10, shift the decimal to the right one place.
- To multiply by 100, shift the decimal to the right two places.
- To multiply by 1000, shift the decimal to the right three places.

Example: $1.\underbrace{23}4 \times 100 = 123.4$

Shift ⟶

- The number of places we shift the decimal point is the same as the number of zeros we see on the multiple of ten.

Practice:

Multiply in your head, not on paper.

1. 1.456 × 10 = ____ ____. ____ ____

2. 1.456 × 100 = ____ ____ ____. ____

3. 1.456 × 1000 = ______________

4. 0.728 × 10 = ______________

5. 0.915 × 1000 = ______________

6. 0.915 × 10 = ______________

7. 6.401 × 10 = ______________

8. 3.67 × 1000 = ______________

9. The Acme paper company places sheets of poster board in boxes of 100 sheets. If each poster board weighs 4.82 ounces, how much does each box of poster board weigh? Remember to write the units.

________ × ________ = ________

10. A moving company is packing boxes of pillows at a furniture company. Each box weights 2.9 pounds. If the moving company packed 100 boxes, how many pounds of pillows did they pack? Remember to write the units.

________ × ________ = ________

Name ______________________________

• Finding the Least Common Multiple of Two Numbers

- List **multiples** of each number and find the first number of both lists that are the same.
- You can use a multiplication table to locate multiples.

Example: Find the **least common multiple** (LCM) of 5 and 7.
Look down the 5s and 7s columns.
Find the first number that is the same in both columns: 35

Practice:

Find the least common multiple (LCM) of each pair of numbers.

1. 4 and 9 ________ **2.** 3 and 4 ________ **3.** 2 and 5 ________

4. 6 and 8 ________ **5.** 2 and 6 ________ **6.** 3 and 7 ________

7. 6 and 9 ________ **8.** 8 and 12 ________ **9.** 6 and 10 ________

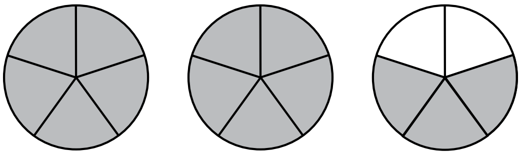
10. The denominators of $\frac{3}{8}$ and $\frac{7}{10}$ are 8 and 10. What is the least common multiple of 8 and 10?

____

Name ________________________________

• Writing Mixed Numbers as Improper Fractions

Example: The circles below are shaded to show $2\frac{3}{5}$.
To write $2\frac{3}{5}$ as an improper fraction, count the shaded parts.



Write the total number of shaded parts as the numerator.
Write the number of parts in one circle as the denominator.

$$2\frac{3}{5} = \frac{13}{5}$$

- To change a mixed number to an improper fraction:
  1. Multiply denominator times whole number.
  2. Add numerator.
  3. Keep original denominator.

Example:

$$\underset{\overset{\nwarrow}{\times}}{\overset{\overset{+}{\nearrow}}{2\frac{1}{4}}}$$

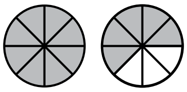
Multiply; then add.

$$(4 \times 2) + 1 \longrightarrow \frac{9}{4}$$

Practice:

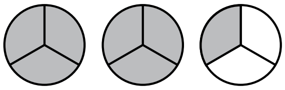
For problems 1–3, name the number of shaded circles as an improper fractions and as a mixed number.

1.



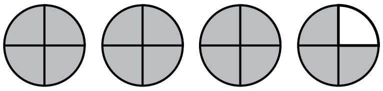
Improper	Mixed

2.



Improper	Mixed

3.



Improper	Mixed

Change each mixed number to an improper fraction. (Multiply; then add.)

4. $\underset{\overset{\nwarrow}{\times}}{\overset{\overset{+}{\nearrow}}{5\frac{1}{3}}} =$ __________

5. $1\frac{3}{4} =$ __________

6. $2\frac{2}{3} =$ __________

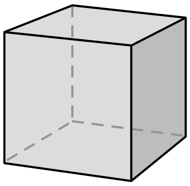
Name __________________________________

• Using Formulas

- A **formula** is a rule that is used to solve a specific problem. We express formulas as **equations**.
- We can use formulas to solve problems about the **perimeter**, **area**, and **volume** of polygons and geometric solids.

  You may already know the formulas for the perimeter and area of a square, or for the volume of a cube.

  $P = 4s$ $A = s^2$ $V = s^3$

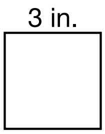


- Geometric formulas use letters or symbols to represent **dimensions** such as side length (*s*), length (*l*), width (*w*), and height (*h*).

Practice:

Use the formula to find the area of each shape.
Area of a rectangle = length × width

1.



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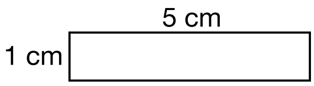
2.



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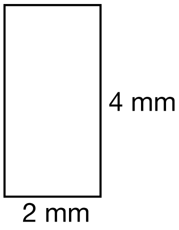
3.



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4. Which is not a formula for the area of a square? __________

A $A = s \cdot s$ **B** $A = l \times w$ **C** $A = s^2$ **D** $A = 4s$

5. Write a formula for the volume of a cube using different variables for each dimension. __________

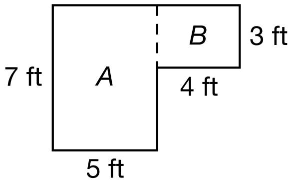
6. What is the perimeter of a square with a side length of 5 cm? __________

7. What is the perimeter of a rectangle with a width of 8 inches and a length of 12 inches? __________

Name ______________________________

• Area, Part 2

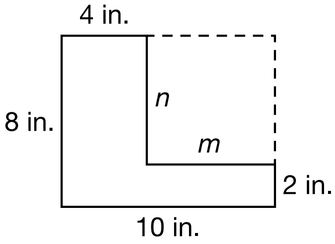
- To find the **area** of complex shapes:
  1. Think of the shape as two or more separated shapes combined.
  2. Find the area of each separate shape using a formula.
  3. Add the areas of the shapes together.



	Area *A*	7 ft × 5 ft = 35 sq. ft
+	Area *B*	4 ft × 3 ft = 12 sq. ft
	Combined area	47 sq. ft

- Use congruent sides to find lengths of sides that are not labeled.

Example: Find the lengths of side *m* and side *n*.



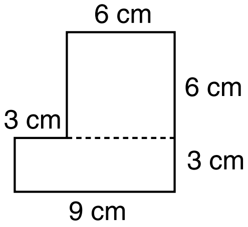
$10 - 4 = m$ $\quad$ $8 - 2 = n$

6 in. $= m$ $\quad$ 6 in. $= n$

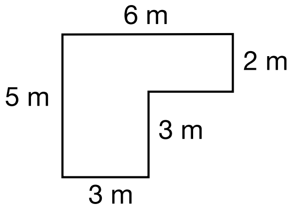
Practice:

Find the area of each figure by adding the areas of the parts.
Remember to write the units.

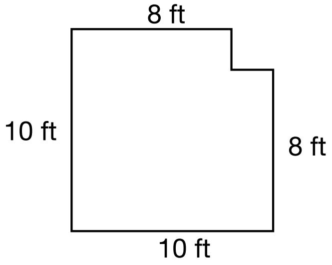
1. __________



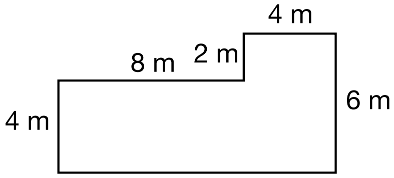
2. __________



3. __________



4. __________



Name ____________________________________

• Finding Common Denominators to Add, Subtract, and Compare Fractions

- **Common denominators** are equal.

Common denominators — Different denominators

$$\frac{1}{4} \longleftrightarrow \frac{3}{4} \qquad\qquad \frac{1}{2} \longleftrightarrow \frac{1}{4}$$

- To add or subtract fractions with different denominators:
  1. Find a common denominator.
  2. Rename the fractions using the common denominator.
  3. Add or subtract.
  4. Reduce the answer when possible.

Examples:

$$\begin{array}{rcl} \frac{1}{3} & = & \frac{2}{6} \\ + \ \frac{5}{6} & = & \frac{5}{6} \\ \hline & & \frac{7}{6} = 1\frac{1}{6} \end{array} \qquad\qquad \begin{array}{rcl} 4\frac{5}{6} & = & 4\frac{10}{12} \\ + \ 3\frac{7}{12} & = & 3\frac{7}{12} \\ \hline & & 7\frac{17}{12} = 8\frac{5}{12} \end{array}$$

- To compare fractions:
  1. Name both fractions with common denominators.
  2. Compare the numbers on top.

Example: Compare.

$$\begin{array}{ccc} \frac{2}{3} & \bigcirc & \frac{5}{9} \\ \downarrow & & \downarrow \\ \frac{6}{9} & > & \frac{5}{9} \end{array}$$

Practice:

Find each sum or difference.

1. $$\begin{array}{rcl} \frac{1}{3} & = & \frac{}{9} \\ + \ \frac{4}{9} & = & \frac{4}{9} \\ \hline \end{array}$$

2. $$\begin{array}{rcl} \frac{2}{3} & = & \frac{}{12} \\ - \ \frac{5}{12} & = & \frac{5}{12} \\ \hline \end{array}$$

3. $$\begin{array}{rcl} \frac{2}{5} & = & \frac{}{10} \\ + \ \frac{1}{10} & = & \frac{1}{10} \\ \hline \end{array}$$

4. $$\begin{array}{rcl} \frac{1}{4} & = & \frac{}{8} \\ + \ \frac{3}{8} & = & \frac{3}{8} \\ \hline \end{array}$$

5. $$\begin{array}{rcl} \frac{4}{7} & = & \frac{}{21} \\ + \ \frac{5}{21} & = & \frac{5}{21} \\ \hline \end{array}$$

6. $$\begin{array}{rcl} \frac{3}{10} & = & \frac{}{30} \\ - \ \frac{4}{30} & = & \underline{\qquad} \\ \hline \end{array}$$

7. $$\begin{array}{rcl} 1\frac{1}{3} & = & \underline{\qquad} \\ + \ 1\frac{3}{4} & = & \underline{\qquad} \\ \hline \end{array}$$

8. $$\begin{array}{rcl} 2\frac{4}{9} & = & \underline{\qquad} \\ + \ 1\frac{8}{18} & = & \underline{\qquad} \\ \hline \end{array}$$

Compare.

9. $\frac{5}{8} \bigcirc \frac{3}{4}$

10. $\frac{5}{12} \bigcirc \frac{1}{3}$

Name ____________________

Reteaching 117

Lesson 117

• Dividing a Decimal Number by a Whole Number

- When dividing decimal numbers:

  Move the decimal point up to the answer line.
  Use short division to divide by a one-digit whole number.

Examples: $\begin{array}{r} 2.4 \\ 2\overline{)4\underset{\uparrow}{.}8} \end{array}$ $\qquad$ $\begin{array}{r} 4.2 \\ 4\overline{)16\underset{\uparrow}{.}8} \end{array}$

- If the dividend is less than 1, use a zero as a placeholder in the quotient before the decimal point.

Practice:

Divide.

1. $3\overline{)0.66}$ **2.** $7\overline{)1.4}$ **3.** $5\overline{)2.25}$

4. $8\overline{)3.2}$ **5.** $6\overline{)0.42}$ **6.** $4\overline{)1.04}$

7. $2\overline{)1.22}$ **8.** $9\overline{)0.36}$ **9.** $6\overline{)2.46}$

10. One kilogram is approximately 2.2 pounds. About how many pounds is half a kilogram? (Find half by dividing by 2.) Remember to write the units.

$\overline{)}$

____

Name ______________________________

• More on Dividing Decimal Numbers

- When dividing decimal numbers:
  - Put the dividend inside the division box.
  - Move the decimal point up to the answer (quotient) line.
  - Use short division with one-digit divisors.
  - Use zero as a placeholder in the quotient.
  - "Attach" zeros to the dividend until there is no remainder.

Example: $0.6 \div 4 \longrightarrow 4\overline{)0.6} \longrightarrow \overset{0.1\,5}{4\overline{)0.6^{2}0}}$

- When dividing by 10, by 100, or 1000, shift the decimal left one place for each zero in the divisor.

Examples: Shift the decimal point to the left.

$4.5 \div 10 = 0.45$
$4.5 \div 100 = 0.045$

Practice:

Divide.

1. $0.8 \div 5$

$\overline{)}$

2. $0.14 \div 4$

$\overline{)}$

3. $0.2 \div 2$

$\overline{)}$

4. $0.2 \div 4$

$\overline{)}$

5. $0.2 \div 5$

$\overline{)}$

6. $0.2 \div 8$

$\overline{)}$

For problems 7–9, find the quotient mentally.

7. $25 \div 100 =$ __________

8. $0.12 \div 10 =$ __________

9. $45 \div 1000 =$ __________

Name ______________________________

• Dividing by a Decimal Number

- When dividing by a decimal number:

  Move the decimal point over, over, and up.
  Use short division when dividing by tenths.
  Be sure to place a digit above each digit.
  Use zero as a placeholder in the quotient (answer line).

Example: $\begin{array}{r} 0\ \ 0.4 \\ 0.\underset{\curvearrowright}{3}\ \overline{)0.\underset{\curvearrowright}{1}2} \end{array}$

Practice:

Divide.

1. $0.4\overline{)1.6}$

2. $0.5\overline{)0.75}$

3. $0.3\overline{)1.8}$

4. $0.6\overline{)2.4}$

5. $0.7\overline{)0.42}$

6. $0.2\overline{)1.82}$

7. $0.8\overline{)3.2}$

8. $0.5\overline{)2.25}$

9. $0.9\overline{)3.6}$

Name ________________________________

• Multiplying Mixed Numbers

- To multiply mixed numbers:
  1. First, change the mixed number to an improper (“top heavy”) fraction.
  2. Multiply.
  3. Convert and reduce as necessary.

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

Change mixed numbers to improper fractions first.

$$\downarrow \qquad \downarrow$$

$$\underset{\longrightarrow}{\frac{5}{2} \times \frac{5}{3}} = \frac{25}{6} \qquad \underset{\longrightarrow}{\frac{25}{6} = 4\frac{1}{6}}$$

Then multiply. Then convert.

Practice:

Multiply.

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

$\underline{\quad} \times \underline{\quad} =$

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

$\underline{\quad} \times \underline{\quad} =$

3. $2\frac{2}{3} \times 3$

$\underline{\quad} \times \underline{\quad} =$

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

$\underline{\quad} \times \underline{\quad} =$

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

$\underline{\quad} \times \underline{\quad} =$

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

$\underline{\quad} \times \underline{\quad} =$