# Mathematics Intervention Activities

#### **Pre- and Post-Assessment**

Use the following Grade 4 Mathematics pre-/post-assessment pages to plan instruction and monitor progress.

#### **DIRECTIONS FOR ADMINISTERING AND SCORING ASSESSMENTS**

This assessment can be administered as a Pre-Assessment for planning instruction and then again as a Post-Assessment at year's end to monitor progress. The assessment can be administered to children individually or in a group. Detailed guidelines for administering and scoring the Pre-/Post-Assessment are presented below.

#### GUIDELINES FOR USING THE PRE-ASSESSMENT

This Pre-/Post-Assessment is 26 pages long. Each page targets a specific Mathematics concept or skill. Plan for about 40 minutes to administer the Pre-Assessment, but allow more time if needed. Children should be allowed to finish answering every item. Depending on the children and your situation, you may want to administer the Pre-Assessment in two parts in different sittings.

Read directions aloud to the student(s). Note where students succeed and where they struggle on the Individual Pre-/Post-Assessment Scoring Chart. Then use Everyday Mathematics Intervention Activity units to support these areas.

#### To Administer the Pre-Assessment:

- 1. Make a copy of the assessment for each child.
- 2. Have children write their names at the top of each assessment page.
- 3. Read the directions on each page and make sure children know what to do.
- 4. Have children complete each item with their best answer.
- 5. When children have finished, collect the assessments.

#### To Score the Pre-Assessment:

- 1. Make a copy of the Individual Pre-/Post-Assessment Scoring Chart (found on page 30 of this PDF) for each student.
- 2. Mark each question correct or incorrect on the assessment page using the Answer Key (found at the end of this PDF).
- 3. To find the total assessment score, count the number of items answered correctly.
- 4. Then write the number count in the Pre-Assessment column.
- Add the total to assess overall performance, and use the correlating unit in the EIA Mathematics book to target skills that look like they require more support.

Using the Results:

- 1. Use the results of the Pre-Assessment to determine each student's current level of proficiency in the strategies and concepts being assessed.
- 2. As explained, the items in the Pre-Assessment measure strategies in particular skills. A student's score on a particular cluster can pinpoint specific instructional needs. A student who answers fewer than 50% of items in each cluster correctly may need focused instructional attention on those particular strategies.
- 3. Plotting scores on the Individual Pre-Assessment/Post-Assessment Scoring Charts provides a handy reference for monitoring students' growth and development. Such information can be used to identify the skills and strategies to be reinforced for a whole group, small group, or individual.
- 4. Store the Pre-Assessment/Post-Assessment Scoring Charts in an appropriate location for referral during the school year, and for end-of-year comparison of the Pre-Assessment and Post-Assessment scores.

#### GUIDELINES FOR USING THE POST-ASSESSMENT

The Post-Assessment is identical to the Pre-Assessment and should be administered and scored in the same way. Thus, the item numbers on the Individual Pre-/Post-Assessment Scoring Chart are the same for both assessments.

Use the results of the Post-Assessment to determine each student's current level of proficiency in the strategies being assessed. Compare the students' scores on the Pre-Assessment and Post-Assessment—and on each strategy cluster within the assessments—to evaluate the student's progress since the beginning of the year.

Grade 4 Mathematics Pre-/Post-Assessment	Recommended Everyday Mathematics Intervention Activities	
Operations and Algebraic Thinking	Units 1–4	
Number and Operations in Base Ten	Units 5–12	
Number and Operations —Fractions	Units 13-19	
Measurement and Data	Units 20-22	
Geometry	Units 23-26	

Write an equation for each problem. Then solve the problem.

① Some number is 4 times as much as 7.

n = \_\_\_\_ x \_\_\_\_

2 The balloon man has 6 groups of balloons. He has 3 balloons in each group. How many balloons does he have in all?

\_\_\_\_\_

3 There are 4 times as many cats as dogs. There are 12 dogs. How many cats are there?

4 Elana used 36 counters. She put 9 counters in each row. How many rows did she make?

Write an equation for each problem. Then solve the problem.

1 A librarian bought 26 new books. He unpacked 11 books. The rest of the new books are divided equally among 3 cartons. How many new books (n) are in each carton?

(\_\_\_\_\_\_ - \_\_\_\_\_) ÷ \_\_\_\_\_ = \_\_\_\_\_

There are \_\_\_\_\_\_ books in each carton.

2 Tara has 7 coins. Brian has 3 times as many coins as Tara. Brian gets some more coins. Now Brian has 24 coins. How many more coins did Jon get?

\_\_\_\_\_ X \_\_\_\_ + \_\_\_\_ = \_\_\_\_

Jon got \_\_\_\_\_ more coins.

Mrs. Lupo baked 18 oat muffins and 14 blueberry muffins. She brought half of the muffins to school. How many muffins did Mrs. Carson bring to school?

Mrs. Lupo brought \_\_\_\_\_ muffins to school.

List the factors for each number. Show your work.

11

The factors of 11 are \_\_\_\_\_

2 36

The factors of 36 are \_\_\_\_\_

List the first 8 multiples for each number. Write two common multiples.

3 Multiples of 4: \_\_\_\_\_

Multiples of 6:

Two common multiples of 4 and 6: \_\_\_\_\_ and \_\_\_\_

4 Multiples of 6: \_\_\_\_\_

Multiples of 8: \_\_\_\_\_

Two common multiples of 6 and 8: \_\_\_\_\_ and \_\_\_\_

Extend each pattern. Then write a rule.









rule: \_\_\_\_\_

28, 21, 14,	,	
-------------	---	--

rule: \_\_\_\_\_

(3

Input	Output
7	35
6	30
5	25
4	

rule: \_\_\_\_\_

4 Use the rule to make a pattern.

rule: Add 6.

#### Write each number in expanded form.



hundred thousands	ten thousands	thousands	hundreds	tens	ones
		8,	7	0	3

\_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_



hundred thousands	ten thousands	thousands	hundreds	tens	ones
4	0	1,	0	5	7

## Compare. Use >, <, or =.

- **3** 4,649 4,724
- 81,099 80,976

+

thousands	hundreds	tens	ones
1,	1	1	5
	8	3	4

$$30,477 + 5,882 = n$$

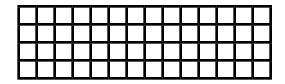
1,225 - 834

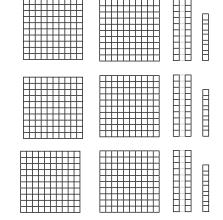
	thousands	hundreds	tens	ones
	1,	2	2	5
-		8	3	4

$$8,475 - 872 = n$$

Use a multiplication property to complete each problem.

$$3 \times 16 = (3 \times _) + (3 \times _)$$





4 A toy store manager orders 247 toy trains. She orders 4 times more toy cars. How many toy cars did she order?

\_\_\_\_\_ toy cars

4 Each shelf in the children's library holds 25 books. There are 42 full shelves of children's books.

How many children's books does the library have?

\_\_\_\_\_ books

**1** 57 ÷ 3

3)57

**2** 72 ÷ 4

4)72

**3** 87 ÷ 5

5)87

4 Ben has 74 trading cards. He puts 6 cards into each package. How many full packages of cards can he make?

\_\_\_\_\_ packages

$$360 \div 9 =$$

$$3,600 \div 9 =$$

4 Lena has 371 beads. She uses 9 beads for each bracelet. How many bracelets can she make?

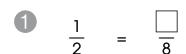
\_\_\_\_\_ bracelets

### Find equivalent fractions. Use the pictures to help.

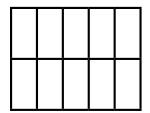
1

		1	
	-	2	
1 0	1 8	1 0	1 0

 $\frac{1}{2}$ 



$$\frac{1}{5}$$
 =  $\frac{\Box}{10}$ 







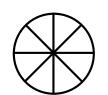
$$\frac{3}{6}$$
 =  $\frac{\square}{8}$ 



4



$$\frac{3}{4} = \frac{3}{4} \times \boxed{\boxed{}} = \boxed{\frac{8}{8}}$$

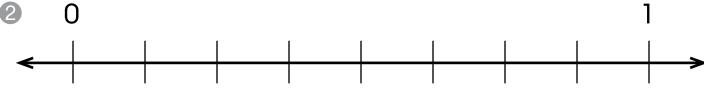


Compare fractions. Use symbols >, <, or =.





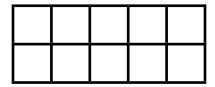




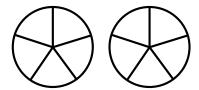








$$\frac{2}{5} + \frac{4}{5} =$$
\_\_\_ or \_\_\_

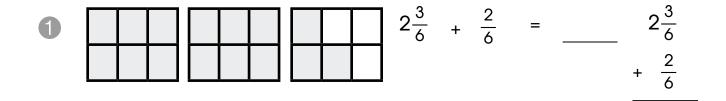


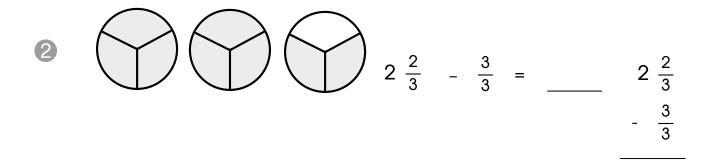
$$\frac{7}{8}$$
 -  $\frac{2}{8}$  = \_\_\_\_

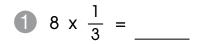


A hiking trail is  $\frac{9}{10}$  mile long. Meg hiked  $\frac{4}{10}$  mile on the trail. How much of the trail is left to hike?

\_\_\_\_\_ mile











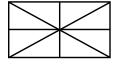


 $2 \frac{1}{6} \times 6 =$ 

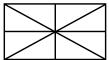


3  $3 \times \frac{5}{8} =$ 









4 Gabe buys 16 muffins at the bake sale. Three-fourths of the muffins are cranberry. How many cranberry muffins did he buy?

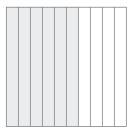
\_\_\_\_\_ cranberry muffins

Complete each problem.

fraction: \_\_\_\_\_

decimal: \_\_\_\_\_

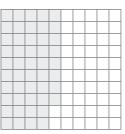
word name: \_\_\_\_\_



2 fraction: \_\_\_\_\_

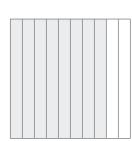
decimal: \_\_\_\_\_

word name: \_\_\_\_\_

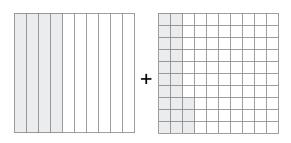


 $3 \quad \frac{\square}{10} \quad = \quad \frac{\square}{100}$ 

0.\_\_\_\_ = 0.\_\_\_\_

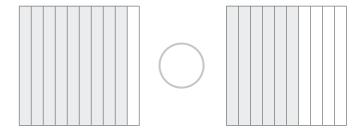


4 \_\_\_\_\_ + \_\_\_ = \_\_\_\_

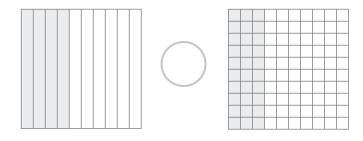


# Compare. Use >, <, or =.

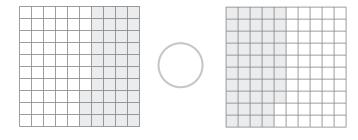




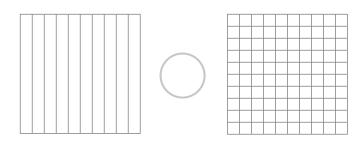
2 0.4 0.30



3 0.43 0.48



4 0.6 0.06



1 5 meters = \_\_\_\_\_ centimeters

\_\_\_\_\_ X \_\_\_\_ = \_\_\_\_

**2** 6 kilograms = \_\_\_\_\_ grams

\_\_\_\_\_ X \_\_\_\_ = \_\_\_\_

**3** 8 liters = \_\_\_\_\_ milliliters

4 It is a 5-kilometer hike from the road to the cabin. How many meters away is the cabin from the road?

\_\_\_\_\_ meters

1) 9 yards = \_\_\_\_\_ feet

\_\_\_\_\_ X \_\_\_\_ = \_\_\_\_

2 5 pounds = \_\_\_\_ ounces

\_\_\_\_\_ X \_\_\_\_ = \_\_\_\_

**3** 7 gallons = \_\_\_\_ quarts

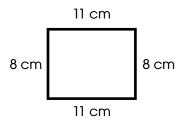
\_\_\_\_\_ X \_\_\_\_ = \_\_\_\_

4 Tara needs 4 1/2 feet of ribbon to wrap a present. How many inches of ribbon does she need?

\_\_\_\_\_ inches

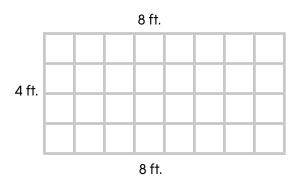
*P* = \_\_\_\_\_

The perimeter is \_\_\_\_\_ centimeters.



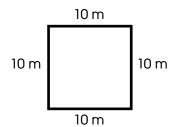
A =

The area is \_\_\_\_\_ square feet.



3 The perimeter is \_\_\_\_\_\_.

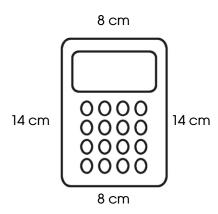
The area is \_\_\_\_\_\_.



4 Kaya's calculator is 14 centimeters long and 8 centimeters wide. What is the perimeter of her calculator? What is the area?

The perimeter is \_\_\_\_\_\_\_.

The area is \_\_\_\_\_\_.

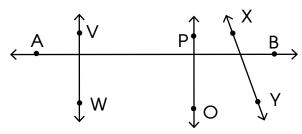


### Use a straight edge. Draw each figure and label it.

1 line AB

- 2 angle FGH
- 3 line segment XY

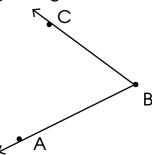
Use the drawing to name each figure. Use symbols for angles and lines.

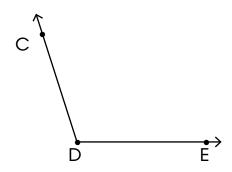


- 4 parallel lines
  - \_\_\_\_\_ is parallel to \_\_\_\_\_.
- 6 perpendicular lines
  - \_\_\_\_\_ is perpendicular to \_\_\_\_\_.

# Solve each problem.

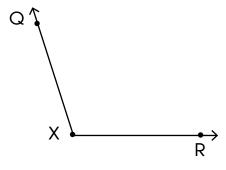
1 Which angle is greater than 90°?



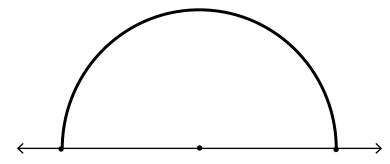


2 Sketch a right angle.

Use a protractor to measure. What is the measure of angle QXR?



4 Riley drew half of a circle. She wants to divide her picture into four equal angles. What will be the measure of each angle?



Solve each problem.

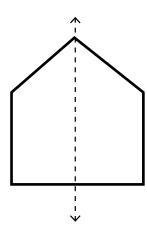
- 1 What is the name of a polygon that has three sides and three equal angles?
- 2 Draw a polygon whose opposite sides are parallel and have equal length. This polygon has four sides and no right angles.

3 Draw a polygon with three sides and one right angle. Label your drawing.

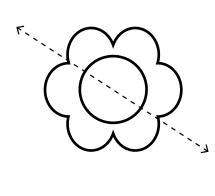
4 Describe a parallelogram. Name two quadrilaterals that are parallelograms.

Is the dotted line a line of symmetry? Write yes or no for each figure.



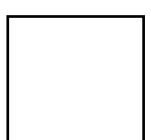






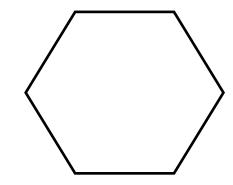
How many lines of symmetry does this have? Draw the lines of symmetry.

3



\_\_\_\_\_ lines of symmetry

4



\_\_\_\_\_ lines of symmetry

# **Individual Scoring Chart**

,	
Student Name	Pre-Assessment Date:
	Post-Assessment Date:

Skill	Assessment page	Pre- Assessment	Post- Assessment	EIA Mathematics Unit
Write an Equation	4	/4	/4	Unit 1
Solve Multi-Step Problems	5	/4	/4	Unit 2
Factors and Multiples	6	/4	/4	Unit 3
Generate Patterns	7	/4	/4	Unit 4
Use Place Value	8	/4	/4	Unit 5
Add Multi-Digit Numbers	9	/4	/4	Unit 6
Subtract Multi-Digit Numbers	10	/4	/4	Unit 7
Multiplication Properties	11	/4	/4	Unit 8
Multiply by a One-Digit Number	12	/4	/4	Unit 9
Multiply by a Two-Digit Number	13	/4	/4	Unit 10
Divide Two-Digit Numbers	14	/5	/4	Unit 11
Divide Multi-Digit Numbers	15	/4	/4	Unit 12
Find Equivalent Fractions	16	/4	/4	Unit 13
Compare Fractions	17	/4	/4	Unit 14
Add and Subtract Fractions	18	/4	/4	Unit 15
Add/Subtract Mixed Numbers	19	/4	/4	Unit 16
Multiply a Fraction by a Whole Number	20	/4	/4	Unit 17
Tenths and Hundredths	21	/4	/4	Unit 18
Compare Decimals	22	/4	/4	Unit 19
Use Metric Measurements	23	/4	/4	Unit 20
Use Customary Measurements	24	/4	/4	Unit 21
Perimeter and Area	25	/4	/4	Unit 22
Lines and Angles	26	/4	/4	Unit 23
Measure Angles	27	/4	/4	Unit 24
Classify Polygons	28	/4	/4	Unit 25
Symmetry	29	/4	/4	Unit 26
TOTAL		/105	/104	

Write an equation for each problem. Then solve the problem.

1 Some number is 4 times as much as 7.

The balloon man has 6 groups of balloons. He has 3 balloons in each group. How many balloons does he have in all?

$$6 \times 3 = 18$$

3 There are 4 times as many cats as dogs. There are 12 dogs. How many cats are there?

$$4 \times 12 = 48$$

4 Elana used 36 counters. She put 9 counters in each row. How many rows did she make?

$$36 \div 9 = 4$$

Write an equation for each problem. Then solve the problem.

1 A librarian bought 26 new books. He unpacked 11 books. The rest of the new books are divided equally among 3 cartons. How many new books (n) are in each carton?

(<u>26</u> - <u>11</u>) ÷ <u>3</u> = <u>5</u>

There are \_\_\_\_\_\_\_ books in each carton.

2 Tara has 7 coins. Brian has 3 times as many coins as Tara. Brian gets some more coins. Now Brian has 24 coins. How many more coins did Jon get?

(7 x 3) + n = 24

Jon got \_\_\_\_\_ more coins.

Mrs. Lupo baked 18 oat muffins and 14 blueberry muffins. She brought half of the muffins to school. How many muffins did Mrs. Carson bring to school?

 $(18 + 14) \div 2 = 16$ 

Mrs. Lupo brought \_\_\_\_ muffins to school.

List the factors for each number. Show your work.

- 1) The factors of 11 are \_\_\_\_\_\_\_(1, 11)
- 2 36 The factors of 36 are \_\_\_\_\_\_1, 3, 4, 6, 9, 12, 36

List the first 8 multiples for each number. Write two common multiples.

- Multiples of 4:
  4, 8, 12, 16, 20, 24, 28, 32
  Multiples of 6:
  6, 12, 18, 24, 30, 36, 42, 48
  Two common multiples of 4 and 6:
  12
  and
  24
- 4 Multiples of 6:

  6, 12, 18, 24, 30, 36, 42, 48

  8, 16, 24, 32, 40, 48, 56, 64
  - Two common multiples of 6 and 8: \_\_\_\_ and \_\_\_

Extend each pattern. Then write a rule.









rule: subtract 3

2 28, 21, 14, \_\_\_\_\_, \_\_\_\_

rule: subtract 7

3

Input	Output
7	35
6	30
5	25
4	20

rule: multiply by 5

4) Use the rule to make a pattern.

rule: Add 6.

# ANSWERS MAY VARY

#### Write each number in expanded form.



hundred thousands	ten thousands	thousands	hundreds	tens	ones
		8,	7	0	3



hundred thousands	ten thousands	thousands	hundreds	tens	ones
4	0	1,	0	5	7

## Compare. Use >, <, or =.

- **3** 4,649 **4**,724
- **4** 81,099 **>** 80,976

1,115 + 834

	thousands	hundreds	tens	ones	
	1,	1	1	5	
+		8	3	4	

1,949

2 359 + 652

1,011

6,408 + 5,098

11,506

4 30,050 + 45,265

75,315

5

$$30,477 + 5,882 = n$$

1,225 - 834

thousands	hundreds	tens	ones
1,	2	2	5
	8	3	4

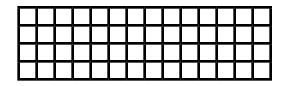
391

Use a multiplication property to complete each problem.

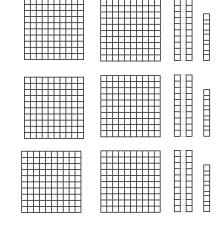
2 3 x 16 = 3 x ( 
$$\frac{8}{8}$$
 +  $\frac{8}{9}$  )
3 x 16 = (3 x  $\frac{8}{9}$  ) + (3 x  $\frac{8}{9}$  )
3 x 16 =  $\frac{24}{48}$  +  $\frac{24}{9}$ 

$$4 (5 \times 0) \times 11 = \frac{0}{0} \times \frac{11}{0}$$

$$5 \times 0 \times 11 = \frac{0}{0}$$







3 6 x 79 79 
$$\frac{x \cdot 6}{474}$$

4 A toy store manager orders 247 toy trains. She orders 4 times more toy cars. How many toy cars did she order?

\_ toy cars

980

408

2,660

4 Each shelf in the children's library holds 25 books. There are 42 full shelves of children's books.

How many children's books does the library have?

1,050

books

- 4 Ben has 74 trading cards. He puts 6 cards into each package. How many full packages of cards can he make?
  - <u>12</u> packages

$$3,600 \div 9 = 400$$

4 Lena has 371 beads. She uses 9 beads for each bracelet. How many bracelets can she make?

\_\_\_\_41 bracelets

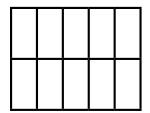
Find equivalent fractions. Use the pictures to help.

1

$$\frac{1}{2}$$
 $\frac{1}{8}$ 
 $\frac{1}{8}$ 
 $\frac{1}{8}$ 
 $\frac{1}{8}$ 

$$\frac{1}{2} = \frac{4}{8}$$

$$\frac{1}{5} = \frac{2}{10}$$







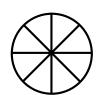
$$\frac{3}{6} = \frac{4}{8}$$



4



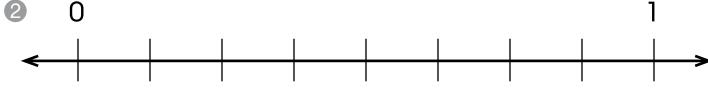
$$\frac{3}{4} = \frac{3}{4} \times \frac{2}{2} = \frac{6}{8}$$



Compare fractions. Use symbols >, <, or =.







 $\frac{1}{2}$   $\frac{6}{8}$   $\frac{2}{8}$   $\frac{5}{8}$ 

2/8 < 1/2 < 5/8 < 6/8

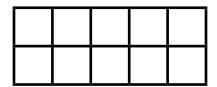
3



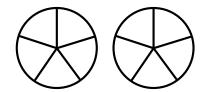


 $\frac{2}{4}$   $\frac{2}{8}$   $\frac{4}{10}$ 

2/8 4/10 2/4



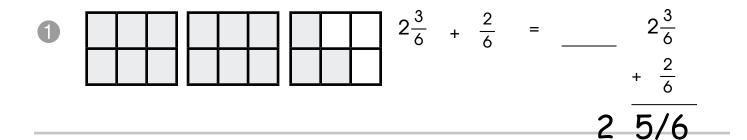
$$2 \frac{2}{5} + \frac{4}{5} = 6/5$$
 or  $1/5$ 

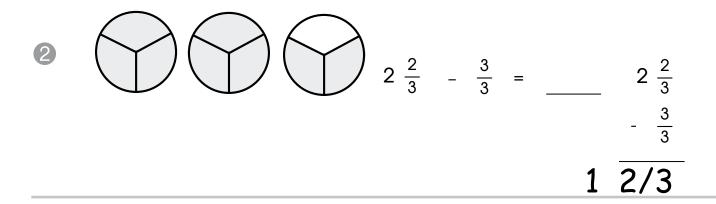




A hiking trail is  $\frac{9}{10}$  mile long. Meg hiked  $\frac{4}{10}$  mile on the trail. How much of the trail is left to hike?

5/10 or 1/2

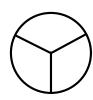




3 
$$1\frac{4}{5} + 1\frac{1}{5} = \frac{1\frac{4}{5}}{1\frac{1}{5}}$$
  
2  $\frac{1\frac{4}{5}}{5/5}$  or 3

1 8 × 
$$\frac{1}{3}$$
 = 8/3

$$\frac{\Box}{3} = 2 \frac{2}{3}$$







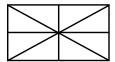
$$2\frac{1}{6} \times 6 = 6/6$$

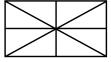
$$\frac{\Box}{6}$$
 = 1

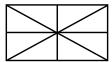


3 × 
$$\frac{5}{8}$$
 = 15/8

$$\frac{\square}{8} = 1.7/8$$







4 Gabe buys 16 muffins at the bake sale. Three-fourths of the muffins are cranberry. How many cranberry muffins did he buy?

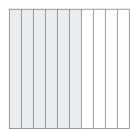
\_\_\_\_\_ cranberry muffins

Complete each problem.

1 fraction: 6/10

decimal: 0.6

word name: six-tenths

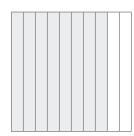


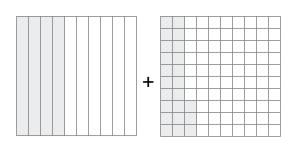
2 fraction: 48/100

decimal: 0.48

word name. forty-eight hundredths

0.8 = 0.80



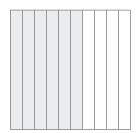


### Compare. Use >, <, or =.

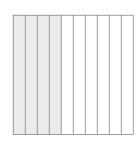




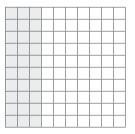




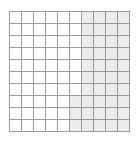
**2** 0.4 **>** 0.30



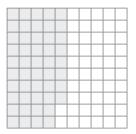




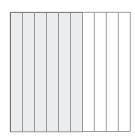
**3** 0.43 **4** 0.48







**4** 0.6 **>** 0.06





1) 5 meters = 500 centimeters

 $\bigcirc$  6 kilograms =  $\boxed{6,000}$  grams

3 8 liters = 8,000 milliliters

4 It is a 5-kilometer hike from the road to the cabin. How many meters away is the cabin from the road?

**5,000** meters

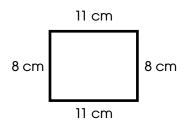
1 9 yards = 27 feet

25 pounds = 80 ounces

3 7 gallons = 28 quarts

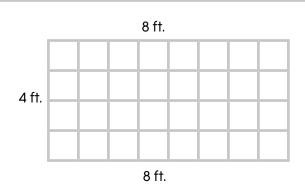
4 Tara needs 4 1/2 feet of ribbon to wrap a present. How many inches of ribbon does she need?

54 inches



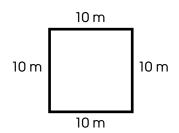
$$A = 1 \times w$$

$$A = \frac{8}{32} \times \frac{4}{32}$$
The area is  $\frac{32}{32}$  square feet.



The perimeter is 40 meters.

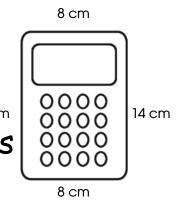
The area is 100 square meters



4 Kaya's calculator is 14 centimeters long and 8 centimeters wide. What is the perimeter of her calculator? What is the area?

The perimeter is 44 centimeters

The area is 112 square centimeters

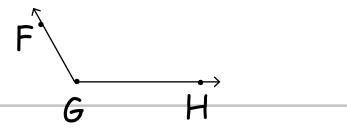


Use a straight edge. Draw each figure and label it.

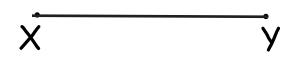
1 line AB



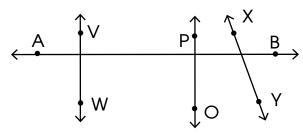
2 angle FGH



3 line segment XY



Use the drawing to name each figure. Use symbols for angles and lines.

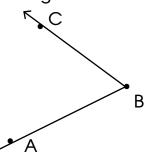


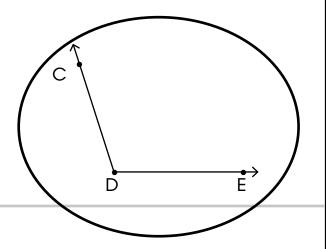
4 parallel lines

6 perpendicular lines

### Solve each problem.

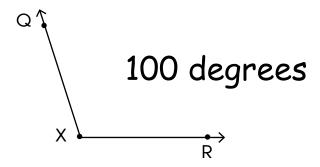
Which angle is greater than 90°?



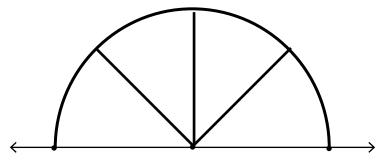


2 Sketch a right angle.

Use a protractor to measure. What is the measure of angle QXR?



4 Riley drew half of a circle. She wants to divide her picture into four equal angles. What will be the measure of each angle?



45 degrees

#### Solve each problem.

1 What is the name of a polygon that has three sides and three equal angles?

# equilateral triangle

2 Draw a polygon whose opposite sides are parallel and have equal length. This polygon has four sides and no right angles.

## ANSWERS MAY VARY

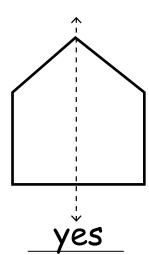
3 Draw a polygon with three sides and one right angle. Label your drawing.

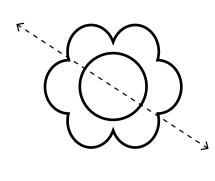
## ANSWERS MAY VARY

4 Describe a parallelogram. Name two quadrilaterals that are parallelograms.

## ANSWERS MAY VARY

Is the dotted line a line of symmetry? Write yes or no for each figure.





no

How many lines of symmetry does this have? Draw the lines of symmetry.

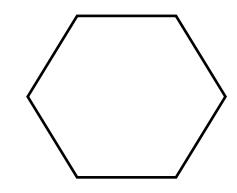






lines of symmetry





lines of symmetry