

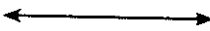
point
line
line segment
ray
plane
intersecting lines
parallel lines
perpendicular lines

Points and Lines

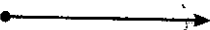
Name _____ Class _____ Date _____


GET STARTED

1. _____

2. a.  _____

b.  _____

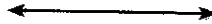
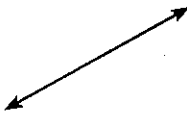
3. a.  _____

b.  _____

4. a. intersecting lines

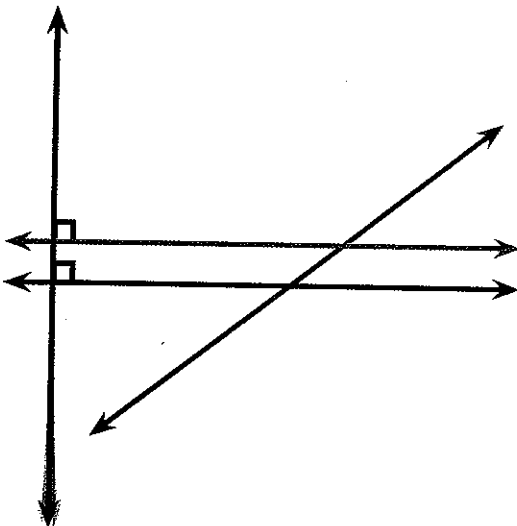
b. perpendicular lines

c. parallel lines



BUILD THE CONCEPT

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How many lines are shown in the figure?

Which lines are parallel?

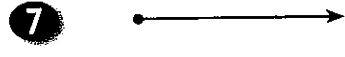
_____ and _____ lines

Which line is perpendicular to the green and blue lines? _____ line

Which line intersects the green and blue lines, but is not perpendicular?
_____ line

TRY IT TOGETHER

Identify each figure as a *line*, *line segment*, or *ray*.



Identify each pair of lines as *intersecting*, *parallel*, and/or *perpendicular*.
Use as many names as possible.



WORK ON YOUR OWN

Recognize Terms and Figures in Geometry



Using Symbols

Using Words



A point is a location; it has no size.



A line is a straight path with no endpoints.



A line segment is part of a line with 2 endpoints.



A ray is a part of a line with 1 endpoint.



A plane is a flat surface with no boundaries.



Intersecting lines cross at 1 point.



Parallel lines are in the same plane and never intersect.

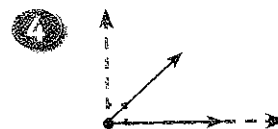
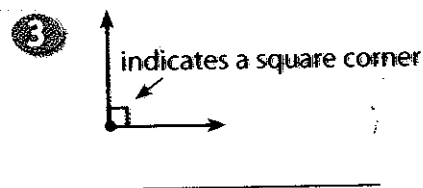
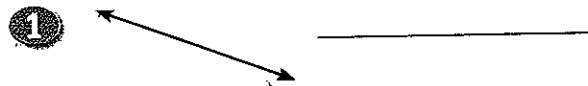


Perpendicular lines intersect to form a square corner.

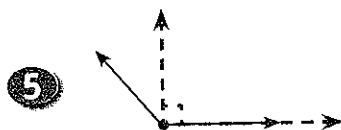
Angles

Name _____ Class _____ Date _____

GET STARTED

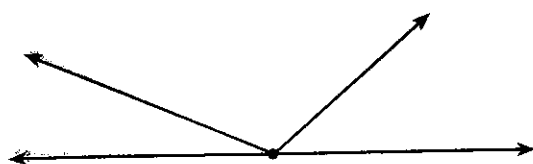


The blue angle is _____
than a right angle.



The blue angle is _____
than a right angle.

BUILD THE CONCEPT



How many acute angles are shown in the figure? _____

How many obtuse angles are shown in the figure? _____

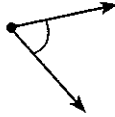
How many right angles are shown in the figure? _____

How many straight angles are shown in the figure? _____

TRY IT TOGETHER

Identify each angle. Write *right*, *acute*, *obtuse*, or *straight*.

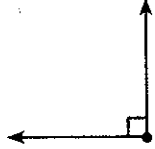
7



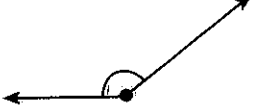
8



9



10



WORK ON YOUR OWN

Recognize and Classify Angles

Using Symbols



Using Words

A right angle has a square corner.

An obtuse angle is larger than a right angle.

An acute angle is smaller than a right angle.

A straight angle forms a straight line.



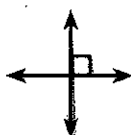
triangle
quadrilateral
pentagon
hexagon
octagon

Polygons

Name _____ Class _____ Date _____

GET STARTED

1



2



Polygon Prefixes

tri means three
quad means four
penta means five
hexa means six
octa means eight

3



_____ sides

4



_____ sides

5



_____ sides

6



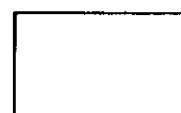
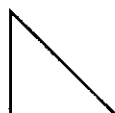
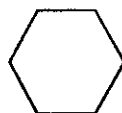
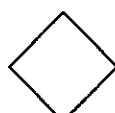
_____ sides

7



_____ sides

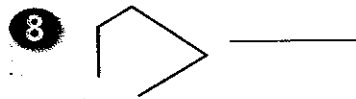
BUILD THE CONCEPT



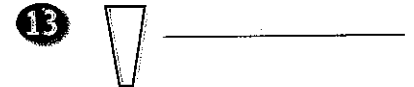
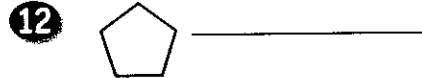
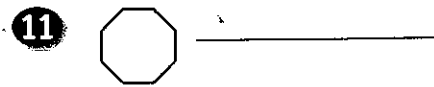
Draw a ring around each triangle. Shade each quadrilateral.
Cross out each hexagon.

TRY IT TOGETHER

Identify whether each figure is a polygon by writing *yes* or *no*.



Identify each polygon.

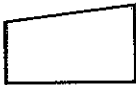


WORK ON YOUR OWN

Recognize and Classify a Polygon

Using Symbols

Using Words



polygon: closed plane figure with straight sides



triangle: polygon with 3 sides



quadrilateral: polygon with 4 sides



pentagon: polygon with 5 sides



hexagon: polygon with 6 sides



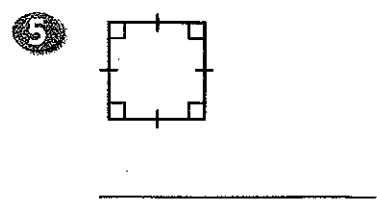
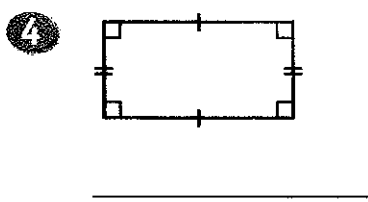
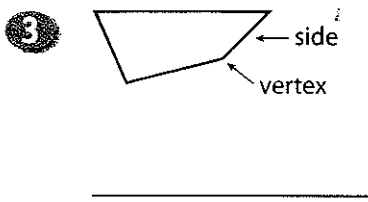
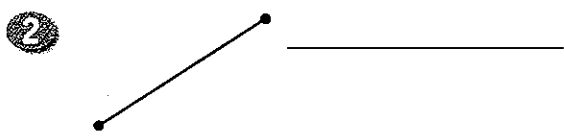
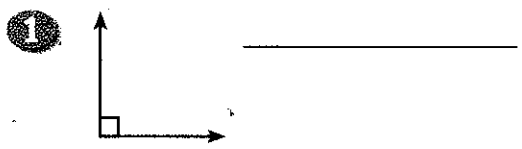
octagon: polygon with 8 sides



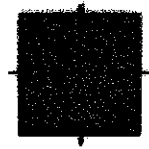
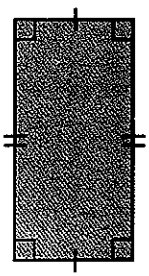
Quadrilaterals

Name _____ Class _____ Date _____

GET STARTED



BUILD THE CONCEPT



Is the blue figure a rectangle?

Is the orange figure a rectangle?

Is the blue figure a square? _____

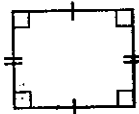
Is the orange figure a square? _____

Every _____ is a _____, but not every _____ is a _____.

TRY IT TOGETHER

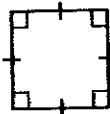
Write the best name for each figure. Write *quadrilateral*, *rectangle*, or *square*.

6



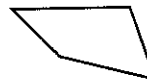
_____ sides
 _____ right angles
 _____ pairs of opposite
 sides of equal length

7



_____ equal sides
 _____ right angles

8



_____ sides
 _____ right angles

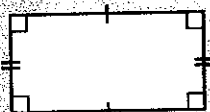
WORK ON YOUR OWN

Classify a Quadrilateral

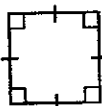
Using Symbols Using Words



quadrilateral: 4 sides
 4 angles



rectangle: 4 sides
 4 right angles
 2 pairs of opposite sides of equal length



square: 4 equal sides
 4 right angles

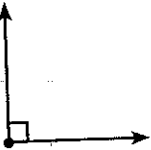


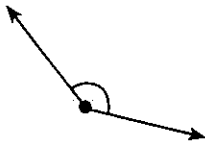
New Vocabulary
 acute triangle
 right triangle
 obtuse triangle

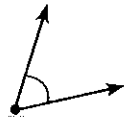
Triangles

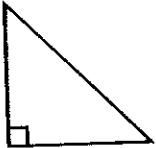
Name _____ Class _____ Date _____


GET STARTED


1 a.  _____ angle

b.  _____ angle

c.  _____ angle

2  _____ triangle

3  _____ triangle

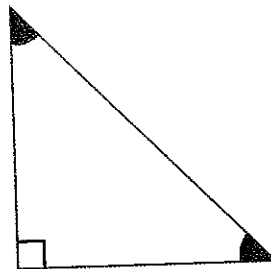
4  _____ triangle

5 _____ 6 _____

BUILD THE CONCEPT



In an obtuse triangle, 1 of the angles is an obtuse angle. The other 2 angles are _____.

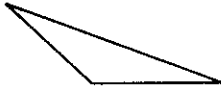


In a right triangle, 1 of the angles is a right angle. The other 2 angles are _____.

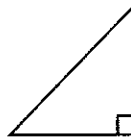
TRY IT TOGETHER

Identify each triangle by its angles. Write *acute*, *right*, or *obtuse*.

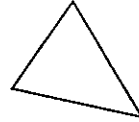
7



8



9



Sketch each triangle.

10

right

11

obtuse

WORK ON YOUR OWN

Classify a Triangle

Using Symbols



Using Words

right triangle: a triangle that has 1 right angle

acute triangle: a triangle that has 3 acute angles

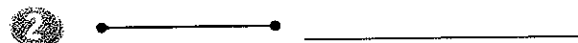
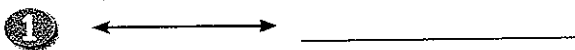
obtuse triangle: a triangle that has 1 obtuse angle



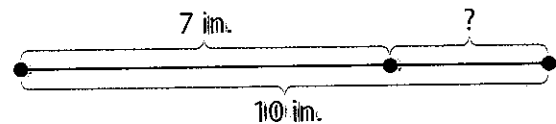
Problem-Solving: Working Backward

Name _____ Class _____ Date _____

GET STARTED



- 3 Mariah puts 2 line segments together to form 1 long line segment. The first line segment measures 7 inches. Together, the 2 line segments measure 10 inches. What is the length of the second line segment?



a. Find: _____

b. How? _____

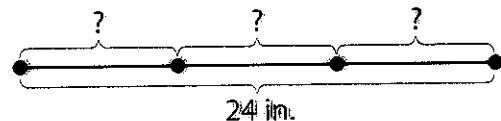
c. Solve. $7 + ? = 10$

$$10 - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

The length of the second line segment is _____ inches.

d. Is the answer reasonable? Explain. _____

- 4 Savita puts 3 line segments together to form 1 long line segment. The 3 line segments together measure 24 inches. The 3 line segments each measure the same length. What is the length of each of the 3 line segments?



a. Find: _____

b. How? _____

c. Solve. $? \times 3 = 24$

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

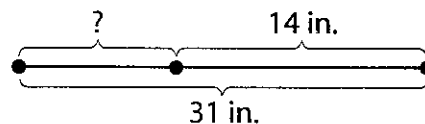
The length of each of the 3 line segments is _____ inches.

d. Is the answer reasonable? Explain. _____

TRY IT TOGETHER

Solve the problem.

- 5 Leah places 2 line segments together to form 1 long line segment. The length of the second line segment is 14 inches. Together, the 2 line segments measure a total of 31 inches. What is the length of the first line segment?



a. Find: _____

b. How? _____

c. Solve. $? + 14 = 31$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

The length of the first line segment is _____ inches.

d. Is the answer reasonable? Explain. _____

WORK ON YOUR OWN

Solve a Problem by Working Backward

Becky puts 3 equal line segments together to form 1 long line segment. The length of the 3 line segments together is 36 inches. What is the length of each of the 3 line segments?

1. Find: the length of each of the 3 line segments

2. How? Work backward by dividing.

3. Solve. $? \times 3 = 36$

$$36 \div 3 = 12$$

The length of each of the 3 line segments is 12 inches.

4. Is the answer reasonable? Explain. Yes, using multiplication, $12 \times 3 = 36$.

HOW
TO

New Vocabulary

circle
center
radius
diameter

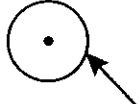
Circles


Name _____ Class _____ Date _____


GET STARTED


1. _____

2. _____

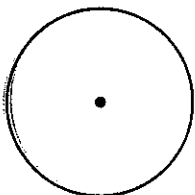
3. a.  _____

b.  _____

4.  _____

5.  _____

Sketch line segments to represent a diameter and a radius of the circle.



**BUILD
THE
CONCEPT**

TRY IT TOGETHER

Name the part of each circle represented in blue.

6



7



8



Sketch the part of each circle.

9

a line segment to represent a radius



10

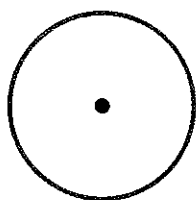
a line segment to represent a diameter



WORK ON YOUR OWN

Identify Parts of a Circle

Using Symbols



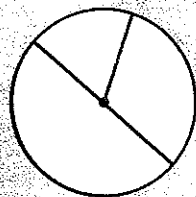
Using Words

A circle is a plane figure made up of points that are the same distance from the center.

The **center** of a circle is the point in the middle of the circle that is the same distance from any point on the circle.

The **radius** of a circle is the distance from the center of a circle to any point on the circle. It can be represented by a line segment with 1 endpoint at the center of the circle and the other endpoint on the circle.

The **diameter** of a circle is the distance across a circle through the center of the circle. It can be represented by a line segment that passes through the center of the circle and has its endpoints on the circle.



HOW TO

New Vocabulary




three-dimensional figure
face
base
edge
vertex
rectangular prism

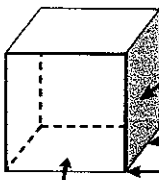
cube
rectangular pyramid
square pyramid
cylinder
cone
sphere

Three-Dimensional Figures

Name _____ Class _____ Date _____

GET STARTED

- 1 a.  _____ b.  _____ c.  _____

- 2  a. _____
b. _____
c. _____
d. _____



bases: _____
_____ prism



faces: _____



base: _____
_____ pyramid



2 bases: _____



1 base: _____



TRY IT TOGETHER

Classify each three-dimensional figure. Write *rectangular prism*, *cube*, *rectangular pyramid*, *square pyramid*, *cylinder*, *cone*, or *sphere*.

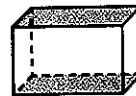
6



7



8



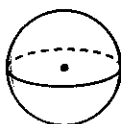
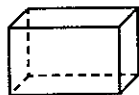
base: _____

WORK ON YOUR OWN



Identify Three-Dimensional Figures

Using Symbols



Using Words

A **rectangular prism** has 6 faces that are rectangles.

A **cube** has 6 faces that are squares.

A **rectangular pyramid** has a base that is a rectangle and faces that are triangles.

A **square pyramid** has a base that is a square and faces that are triangles.

A **cylinder** has 2 bases that are circles.

A **cone** has 1 base that is a circle.

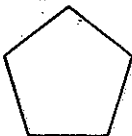
A **sphere** is the set of all points that are the same distance from a fixed point.

Congruent Figures

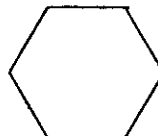
Name _____ Class _____ Date _____

GET STARTED

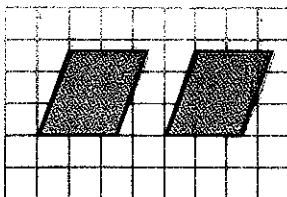
1



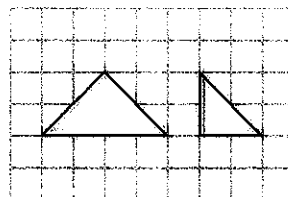
2



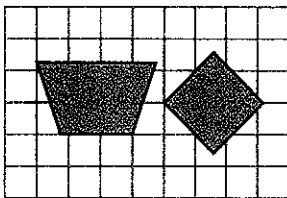
3



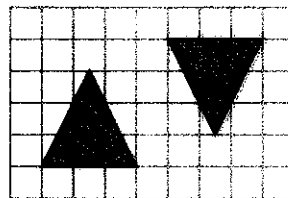
4



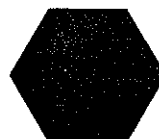
5



6



BUILD THE CONCEPT

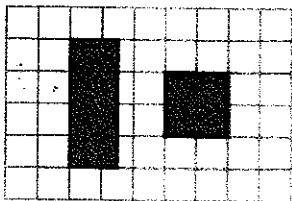


Which figure is congruent to the blue triangle? _____

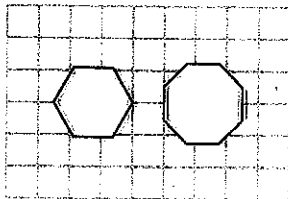
TRY IT TOGETHER

Determine whether the figures are congruent. Write *congruent* or *not congruent*.

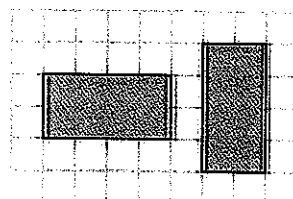
7



8



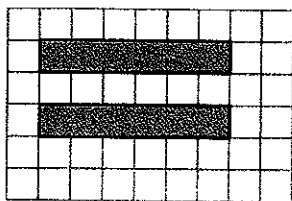
9



WORK ON YOUR OWN

Determine Whether Two Figures Are Congruent

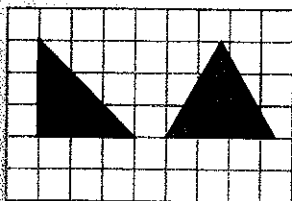
Using Symbols



congruent

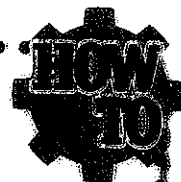
Using Words

Two figures are congruent if they are the same shape and the same size.



not congruent

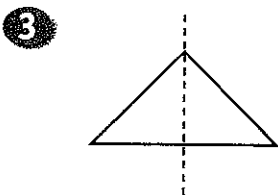
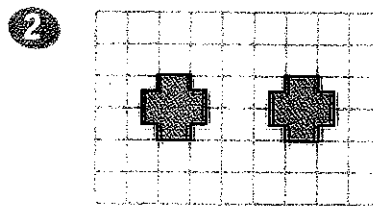
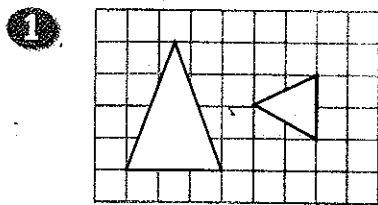
Two figures are not congruent if they are not the same shape or the same size.



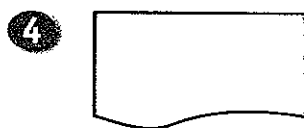
Symmetry

Name _____ Class _____ Date _____

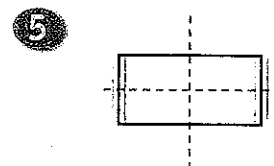
GET STARTED



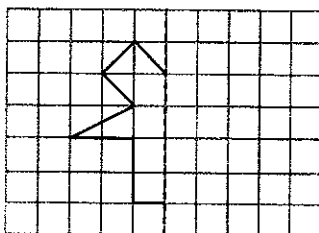
line symmetry? _____



line symmetry? _____



line symmetry? _____



Complete the figure on the right side so it has line symmetry. The dashed line is the line of symmetry.

**BUILD
 THE
 CONCEPT**

TRY IT TOGETHER

Write the number of lines of symmetry each figure has. Then sketch the lines of symmetry.

6



_____ lines of symmetry

7



_____ lines of symmetry

8



_____ lines of symmetry

WORK ON YOUR OWN



Determine Whether a Figure Has Line Symmetry

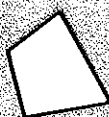
A figure has line symmetry if there is a line that divides it into 2 congruent parts that are mirror images of each other. If a figure is folded along a line of symmetry, both parts will match.

Using Symbols



Using Words

This figure has line symmetry. The dashed line is the line of symmetry.

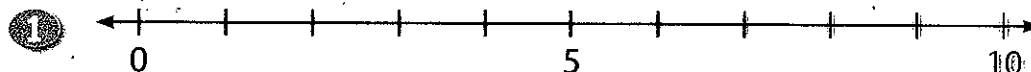


This figure does not have line symmetry.

Coordinate Graphs

Name _____ Class _____ Date _____

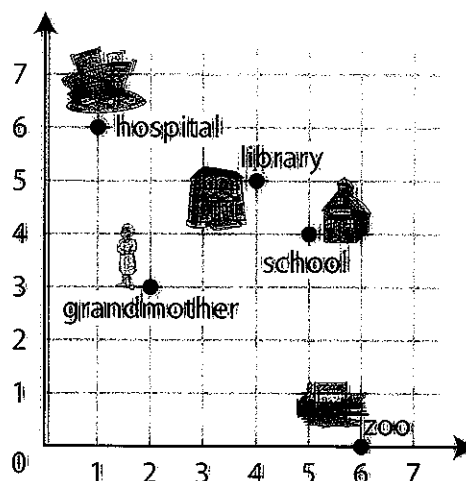
GET STARTED



- 2 Bart uses this map of the city to locate places.
Where does his grandmother live?
right _____, up _____

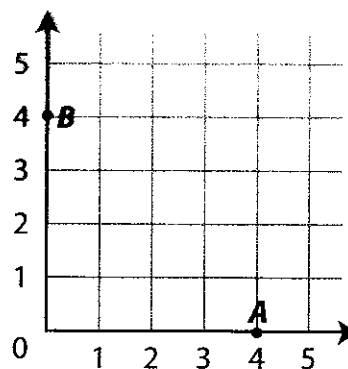
- 3 Where is the zoo located?
right _____, up _____

- 4 What is located at the point right 4, up 5?



Where is point A?
right _____, up _____

Where is point B?
right _____, up _____



When moving 0 lines, the point falls on one of the _____.

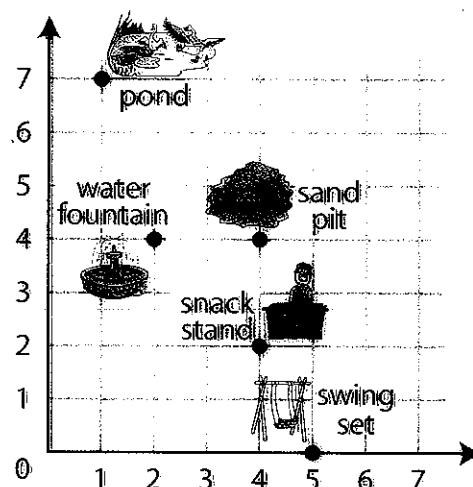
**BUILD
THE
CONCEPT**

TRY IT TOGETHER

Use the coordinate graph to answer each question.

- 5 Where is the pond located?
right _____, up _____
- 6 What is located at the point right 2, up 4?

- 7 Where is the snack stand located?



WORK ON YOUR OWN

Name Points on a Coordinate Graph

Use the coordinate graph from problems 5–7.

Using Symbols

1. Where is the sand pit?
right 4
2. right 4, up 4

Using Words

Start at 0 and move to the right until the line on which the point is located is reached. Record the number from the bottom, horizontal number line.

Move up, counting each line until the point is reached. Record the number from the side, vertical number line.

Locate Points on a Coordinate Graph

Using Symbols

What is located at the point right 5, up 0?
swing set

Using Words

Start at 0 and move to the right the number of units given.

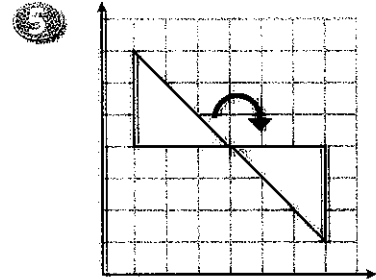
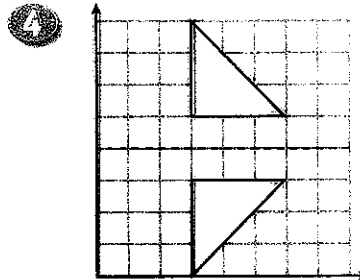
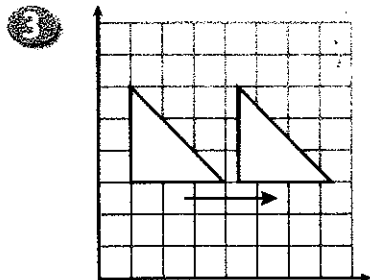
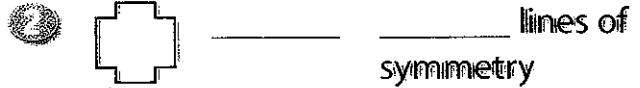
Move up the number of units given.



Transformations

Name _____ Class _____ Date _____

GET STARTED

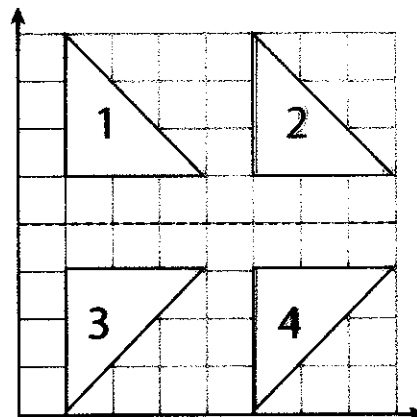


Which figure is a translation of figure 1?

Which figure is a reflection of figure 1?

Which figure is a reflection of figure 2?

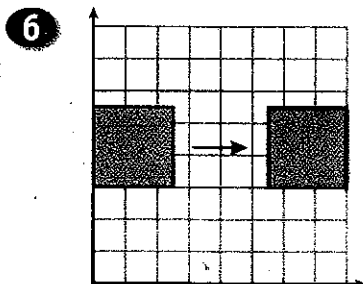
Which figure is a translation of figure 4?

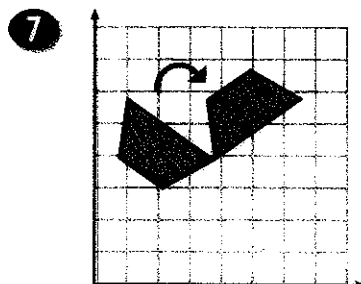


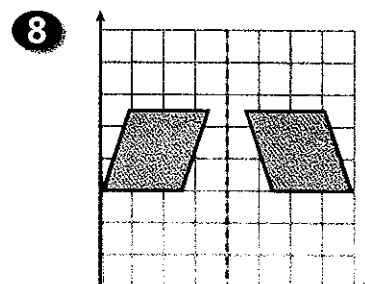
**BUILD
 THE
 CONCEPT**

TRY IT TOGETHER

Classify each transformation. Write *translation*, *reflection*, or *rotation*.



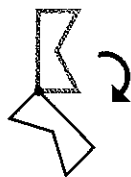
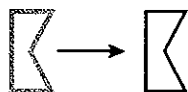




WORK ON YOUR OWN

Recognize a Transformation

Using Symbols



Using Words

Translation is a movement of a figure to a new position by sliding without turning or flipping it. The figure in the new position is congruent to the original figure.

Reflection is a movement of a figure to a new position by flipping the figure over a line. The figure in the new position is congruent to the original figure.

Rotation is a movement of a figure to a new position by turning the figure around a fixed point. The figure in the new position is congruent to the original figure.

