

Chapter

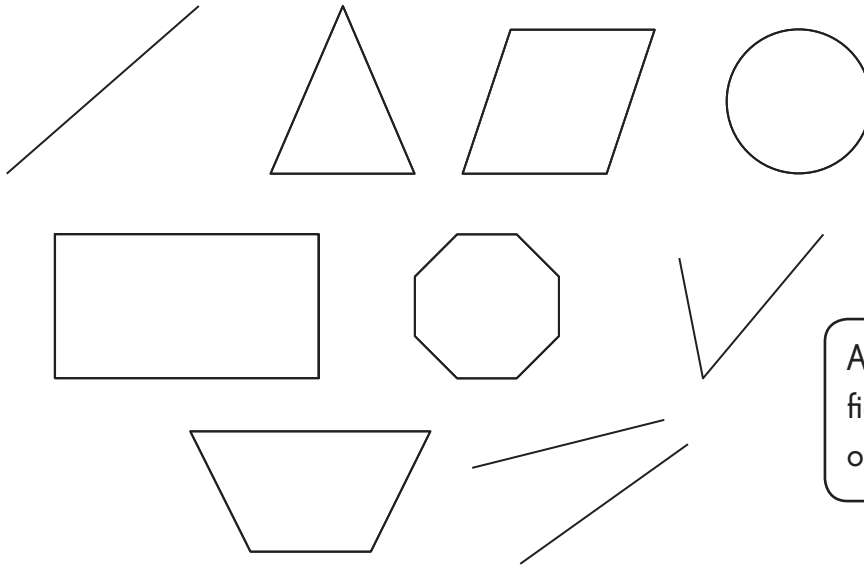
# 18

# Two-Dimensional Shapes

## Practice 1 Classifying Polygons

Circle the polygons.

1.

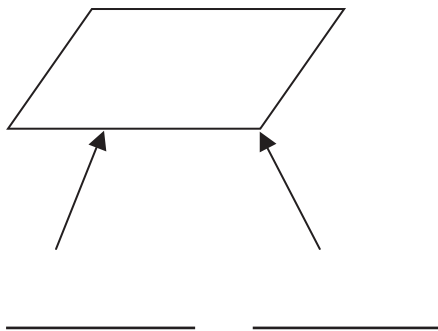


A polygon is a \_\_\_\_\_ figure formed by \_\_\_\_\_ or more line segments.

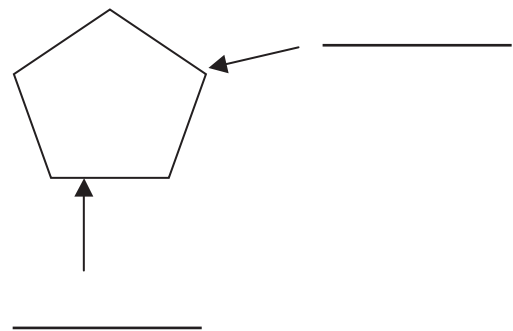


Mark the angles. Label the parts of each polygon.

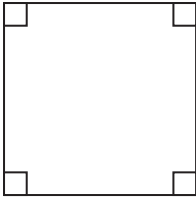
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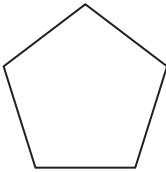


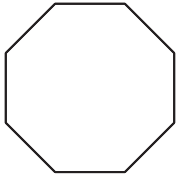
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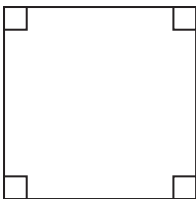


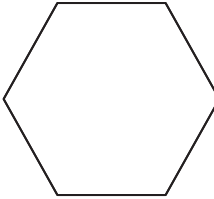
**Identify each polygon.**

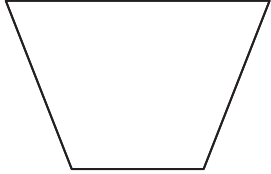
4.   
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5.   
\_\_\_\_\_

6.   
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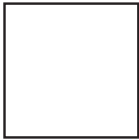
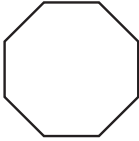
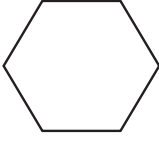
7.   
\_\_\_\_\_

8.   
\_\_\_\_\_

9.   
\_\_\_\_\_



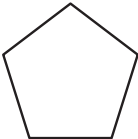


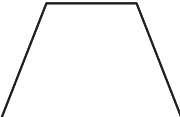
**Complete the table. Then answer the question.**

10.

Polygons	Number of Sides	Number of Vertices	Number of Angles
 square			
 octagon			
 hexagon			

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Polygons	Number of Sides	Number of Vertices	Number of Angles
 <p>triangle</p>			
 <p>rectangle</p>			
 <p>pentagon</p>			
 <p>parallelogram</p>			
 <p>rhombus</p>			
 <p>trapezoid</p>			

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11. Which figures have the same number of sides, vertices and angles?

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A square, rectangle, parallelogram, rhombus and trapezoid are some special polygons. They have \_\_\_\_\_ sides, vertices and angles.

**Are these statements correct? Write *true* or *false*.**

12. A hexagon has seven sides and six angles. \_\_\_\_\_

13. All polygons have four sides. \_\_\_\_\_

14. All parallelograms, squares, and trapezoids have four angles. \_\_\_\_\_

15. An octagon has eight vertices and seven sides. \_\_\_\_\_

16. A pentagon has six angles. \_\_\_\_\_

17. A triangle has two vertices. \_\_\_\_\_

18. A parallelogram can be separated into 4 triangles. \_\_\_\_\_

19. A rectangle has four right angles. \_\_\_\_\_



**Cut out the tangram below and complete the table.**

**20.**

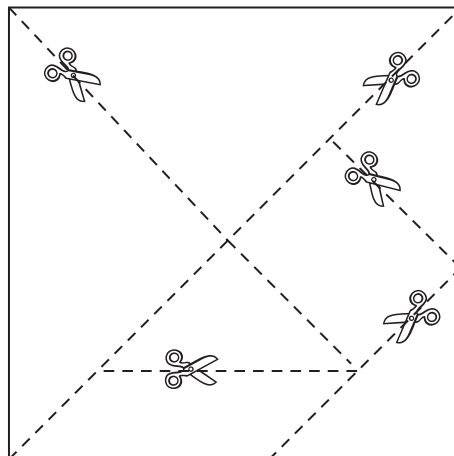
Kind of Polygon	Number of Polygons

**Use at least 5 polygons to make a figure. Complete the table.**

**21.**

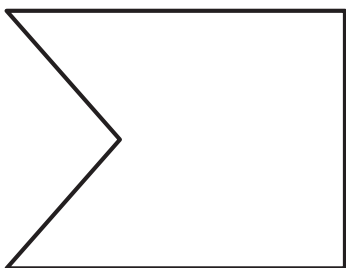
Kind of Polygon Used	Number of Polygons

**22. Name the figure that you have made.**



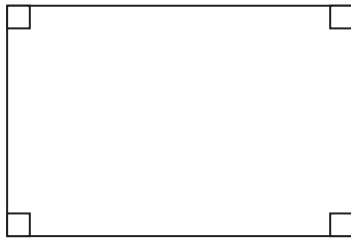
## Solve.

- 23.** I am a polygon. I have 1 more angle than a rectangle has. What am I? \_\_\_\_\_
- 24.** I am a polygon. I have 1 more side than a pentagon has. What am I? \_\_\_\_\_
- 25.** I am a polygon. I have 1 more vertex than a triangle has. What am I? \_\_\_\_\_
- 26.** Add one more polygon to the shape below to make it a hexagon.



**Identify each quadrilateral. Then explain your answer.**

Example



This is a rectangle.  
A rectangle has 2 pairs of opposite sides that are parallel.  
Only the opposite sides of a rectangle need to be of equal length.  
All 4 angles of a rectangle are right angles.

27.



This is a \_\_\_\_\_.

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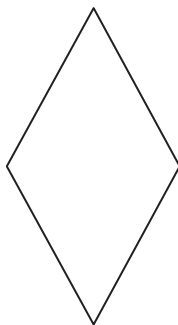
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28.



This is a \_\_\_\_\_.

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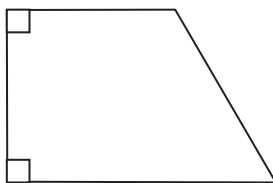
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29.



This is a \_\_\_\_\_.

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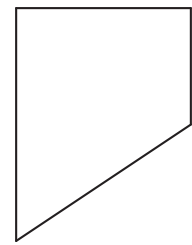
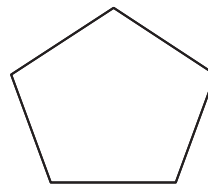
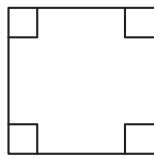
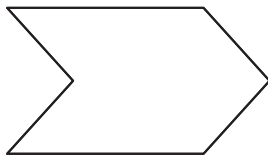
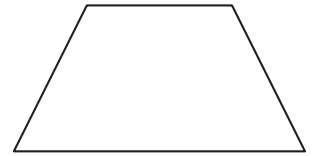
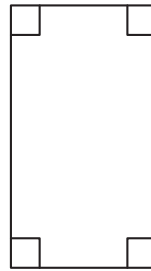
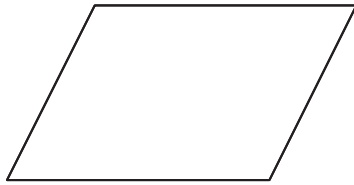
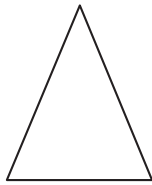
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Write *P* for a parallelogram, *R* for rhombus, or *T* for trapezoid on the shapes.

30.



31. How is a trapezoid different from a parallelogram?

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32. How is a trapezoid similar to a parallelogram?

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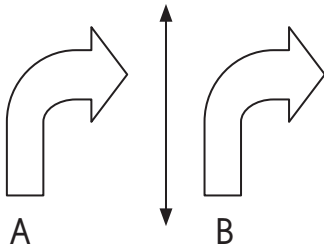
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## Practice 2 Congruent Figures

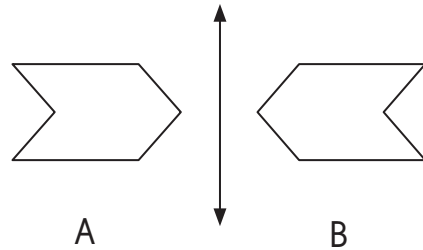
Does Figure A show a flip of Figure B? Write *yes* or *no*.

1.



\_\_\_\_\_

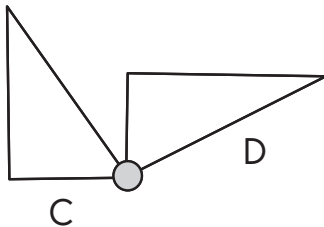
2.



\_\_\_\_\_

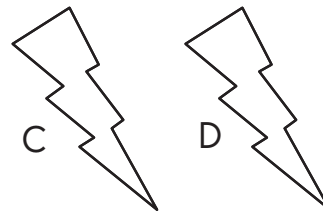
Does Figure C show a slide of Figure D? Write *yes* or *no*.

3.



\_\_\_\_\_

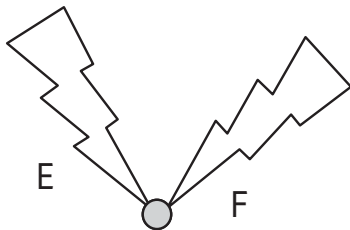
4.



\_\_\_\_\_

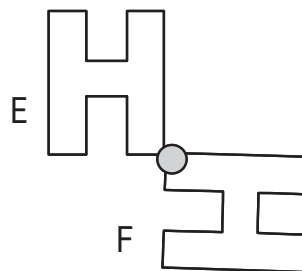
Does Figure E show a turn of Figure F? Write *yes* or *no*.

5.



\_\_\_\_\_

6.



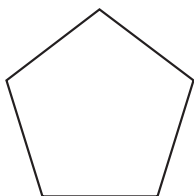
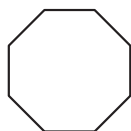
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Flips, slides, and turns are movements that change the position of figures but not their shape or size.

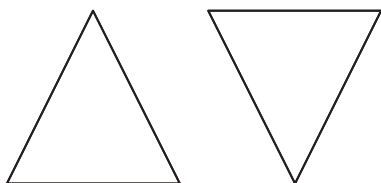
**Look at the pairs of figures.**  
**Identify and explain which pair is congruent and which is not.**

*Example*



The two shapes are not congruent  
because they do not have the same shape.

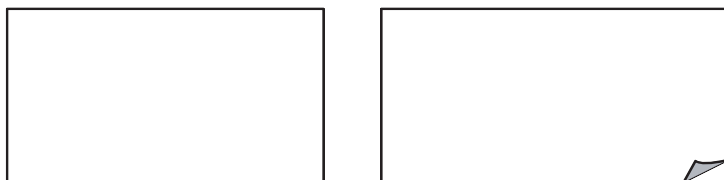
**7.**



The figures are \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_

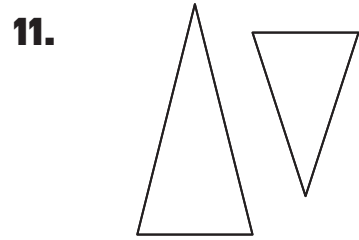
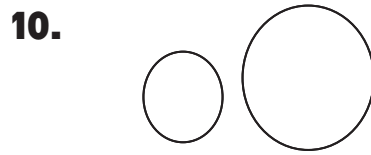
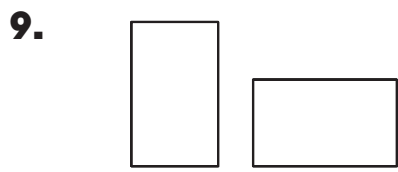
**8.**



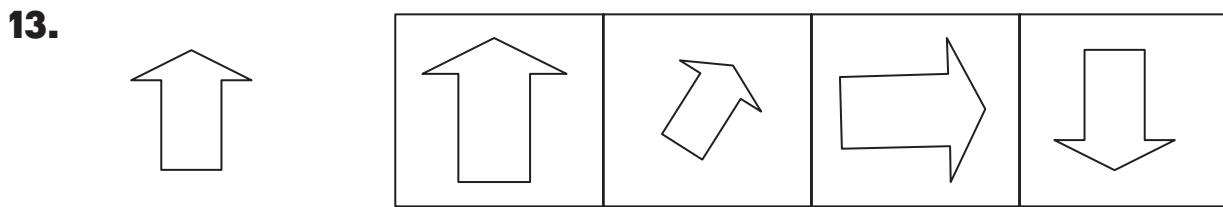
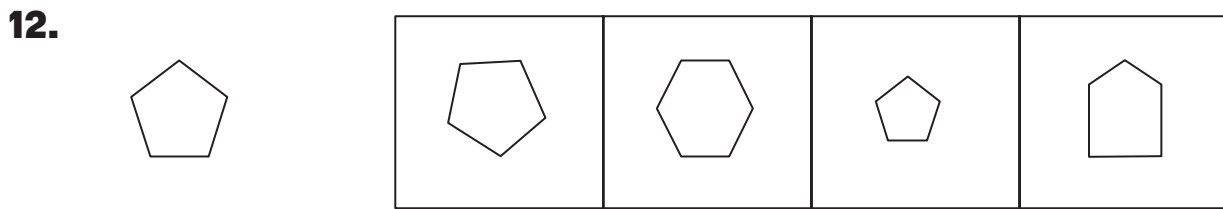
The figures are \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_

**Circle the pairs of congruent shapes.**

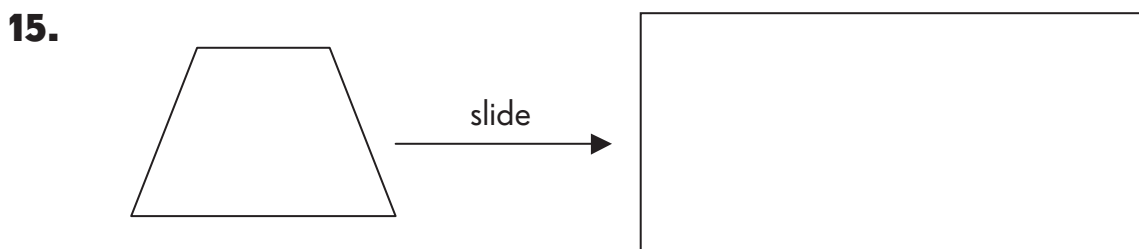
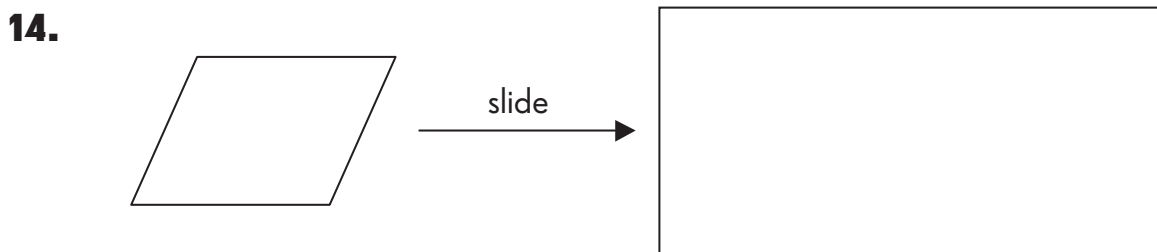


**Circle the congruent figures.**



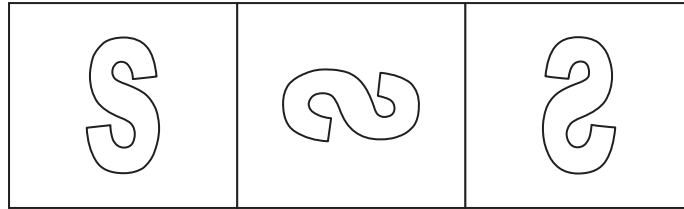
**Draw congruent figures.**

**Trace the shape. Cut it out and draw a congruent figure by sliding it from left to right.**

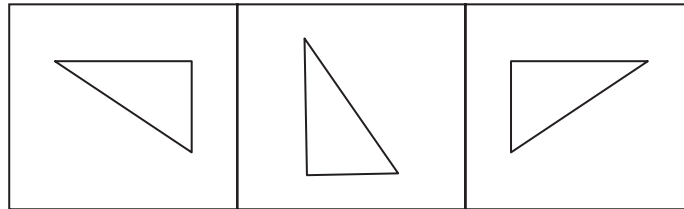
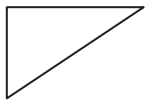


**Circle the figure that shows a flip.**

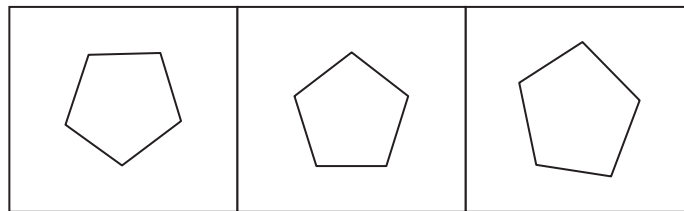
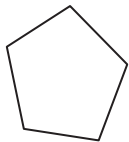
16.



17.

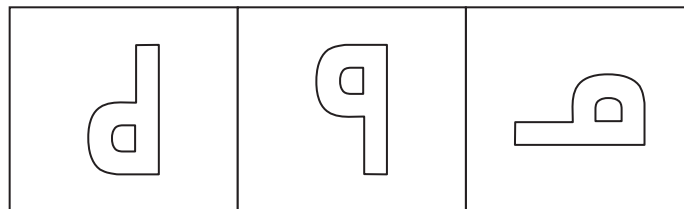


18.

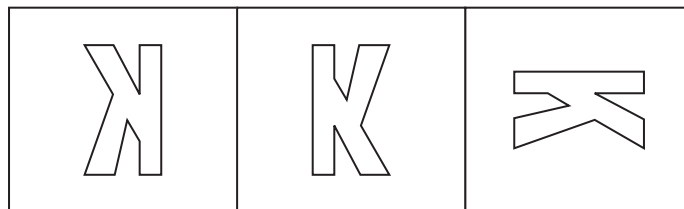


**Circle the figure that shows a turn.**

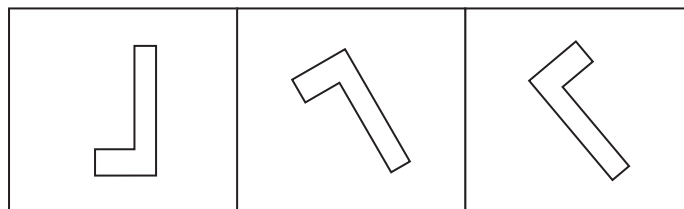
19.



20.



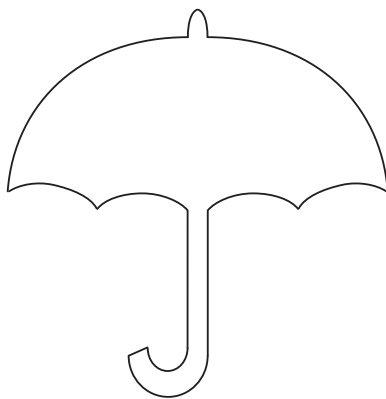
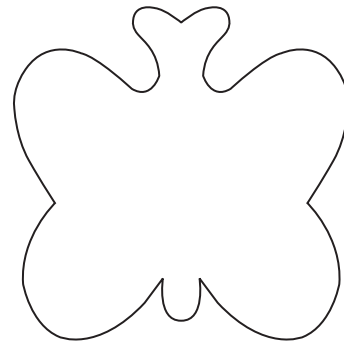
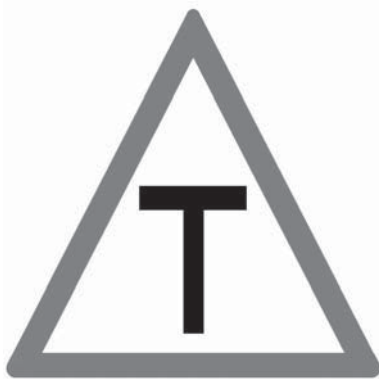
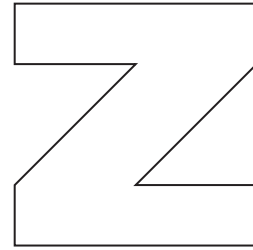
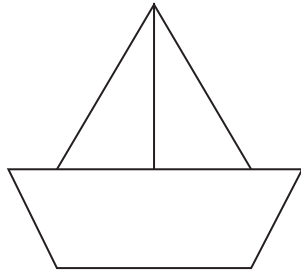
21.



# Practice 3 Symmetry

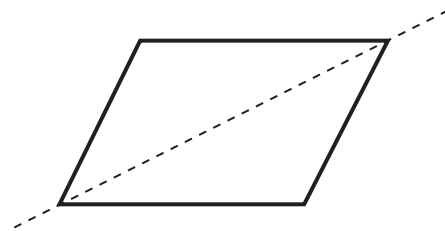
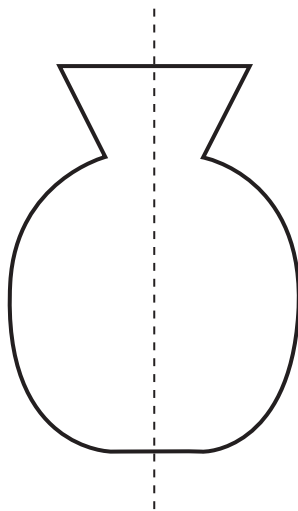
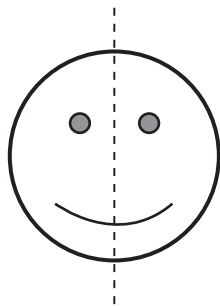
Circle the symmetric figures.

1.



**Decide which of the dotted lines are lines of symmetry.**

2.



A figure has a line of symmetry when congruent halves match exactly when folded along a line.



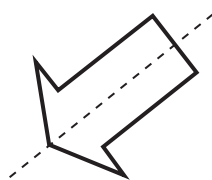
**Decide whether the line is a line of symmetry. Write yes or no.**

3.



\_\_\_\_\_

4.



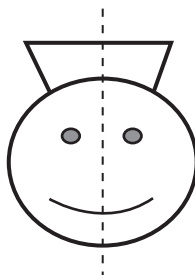
\_\_\_\_\_

5.



\_\_\_\_\_

6.



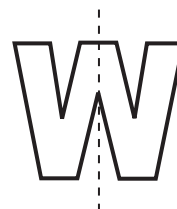
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7.



\_\_\_\_\_

8.



\_\_\_\_\_

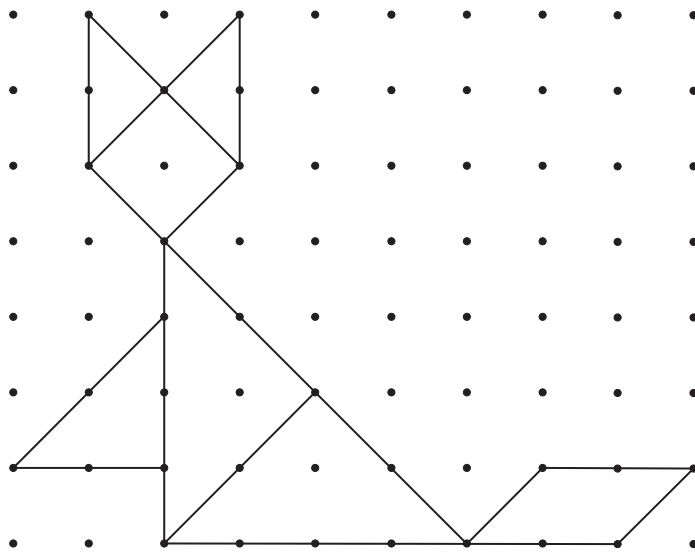


# Put On Your Thinking Cap!

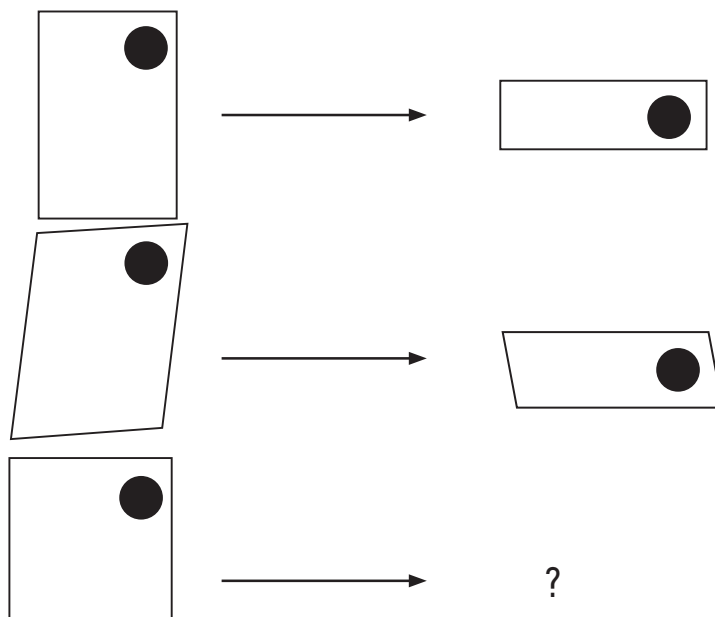


## Challenging Practice

- Copy the figure on a dot paper. Cut it out and rearrange the shapes in the figure to form a square.



- Study the pattern to find the rule. Then draw the missing shape.

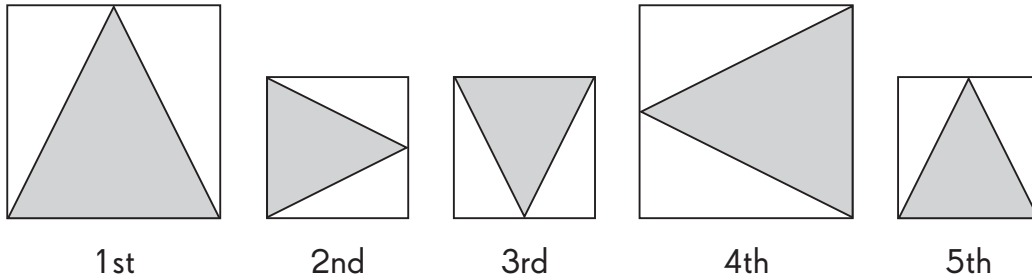




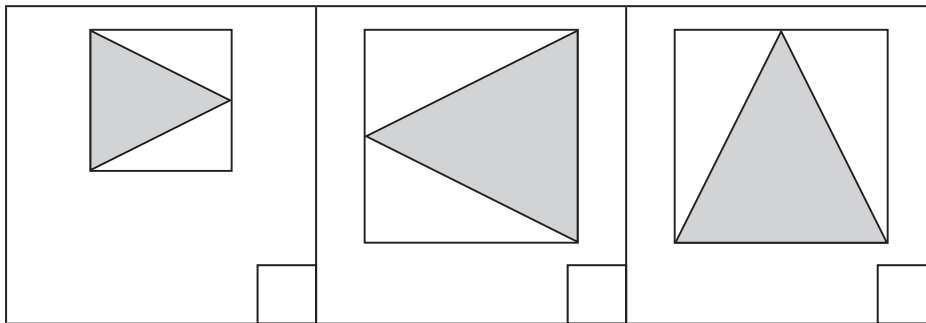
# Put On Your Thinking Cap!



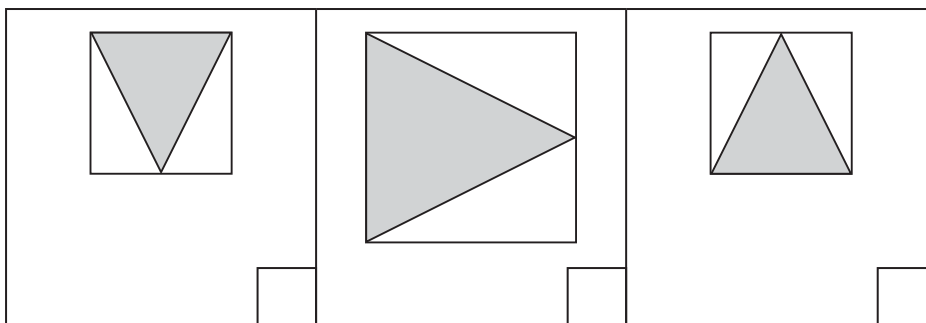
## Problem Solving



1. Look at the repeated pattern.
  - a. Check the box that shows the next shape.



- b. Check the box that shows the tenth shape.



2. Describe the movement shown by the shapes.