

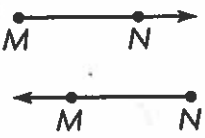
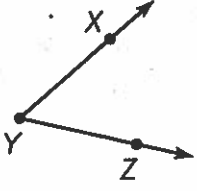
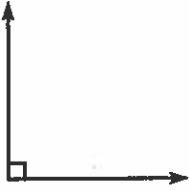
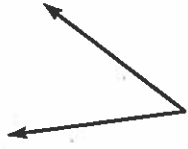




Name \_\_\_\_\_

# Lines, Rays, and Angles

Name	What it looks like	Think	
point $D$	$D \bullet$	A <b>point</b> names a location in space.	
line $AB$ ; $\overleftrightarrow{AB}$ line $BA$ ; $\overleftrightarrow{BA}$		A <b>line</b> extends without end in opposite directions.	
line segment $AB$ ; $\overline{AB}$ line segment $BA$ ; $\overline{BA}$		"Segment" means part. A <b>line segment</b> is part of a line. It is named by its two endpoints.	
ray $MN$ ; $\overrightarrow{MN}$ ray $NM$ ; $\overrightarrow{NM}$		A <b>ray</b> has one endpoint and extends without end in one direction. A ray is named using two points. The endpoint is always named first.	
angle $XYZ$ ; $\angle XYZ$ angle $ZYX$ ; $\angle ZYX$ angle $Y$ ; $\angle Y$		Two rays or line segments that share an endpoint form an angle. The shared point is the vertex of the angle.	
A <b>right angle</b> forms a square corner.	An <b>acute angle</b> opens less than a right angle.	An <b>obtuse angle</b> opens more than a right angle and less than a straight angle.	A <b>straight angle</b> forms a line.
			

Draw and label an example of the figure.

1.  $\overline{PQ}$

2.  $\overrightarrow{KJ}$

3. obtuse  $\angle FGH$



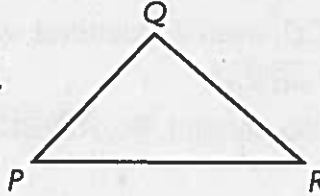
Name \_\_\_\_\_

# Classify Triangles

A **triangle** is a polygon with 3 sides and 3 angles. Each pair of sides joins at a vertex.

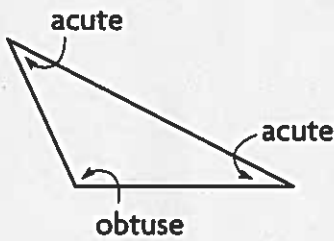
You can name a triangle by its vertices.

$\triangle PQR$        $\triangle QRP$        $\triangle RPQ$   
 $\triangle PRQ$        $\triangle QPR$        $\triangle RQP$

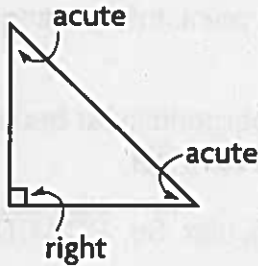


There are 3 types of triangles. All triangles have at least 2 acute angles.

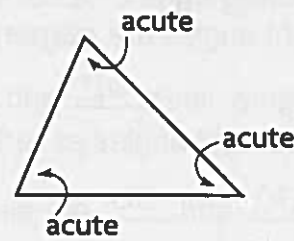
**Obtuse triangle**  
one obtuse angle



**Right triangle**  
one right angle



**Acute triangle**  
three acute angles



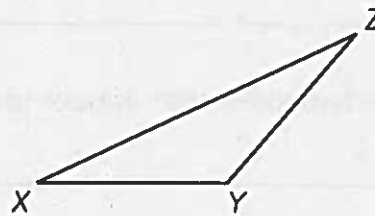
1. Name the triangle. Tell whether each angle is *acute*, *right*, or *obtuse*. A name for the triangle is \_\_\_\_\_

is \_\_\_\_\_

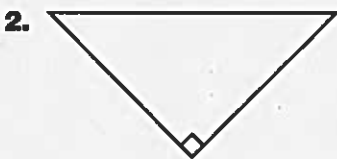
$\angle X$  is \_\_\_\_\_

$\angle Y$  is \_\_\_\_\_

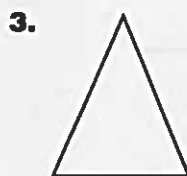
$\angle Z$  is \_\_\_\_\_



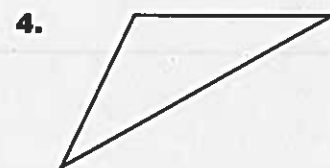
Classify each triangle. Write *acute*, *right*, or *obtuse*.



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

Name \_\_\_\_\_

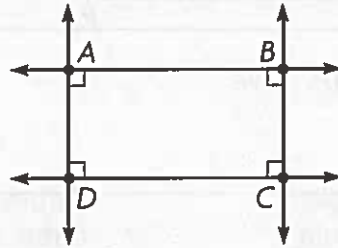
# Parallel Lines and Perpendicular Lines

**Parallel lines** are lines in a plane that are always the same distance apart. Parallel lines or line segments never meet.

In the figure, lines  $AB$  and  $CD$ , even if extended, will never meet.

The lines are parallel. Write  $\overline{AB} \parallel \overline{CD}$ .

Lines  $\underline{AD}$  and  $\underline{BC}$  are also parallel. So,  $\overline{AD} \parallel \overline{BC}$ .



**Intersecting lines** cross at exactly one point. Intersecting lines that form right angles are **perpendicular**.

In the figure, lines  $\underline{AD}$  and  $\underline{AB}$  are perpendicular because they form right angles at vertex  $A$ . Write  $\overline{AD} \perp \overline{AB}$ .

Lines  $\underline{BC}$  and  $\underline{CD}$  are also perpendicular. So,  $\overline{BC} \perp \overline{CD}$ .

Use the figure for 1–3.

1. Name two sides that appear to be parallel.

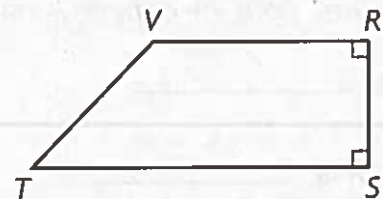
\_\_\_\_\_

2. Name two sides that appear to be perpendicular.

\_\_\_\_\_

3. Name two sides that appear to be intersecting, but not perpendicular.

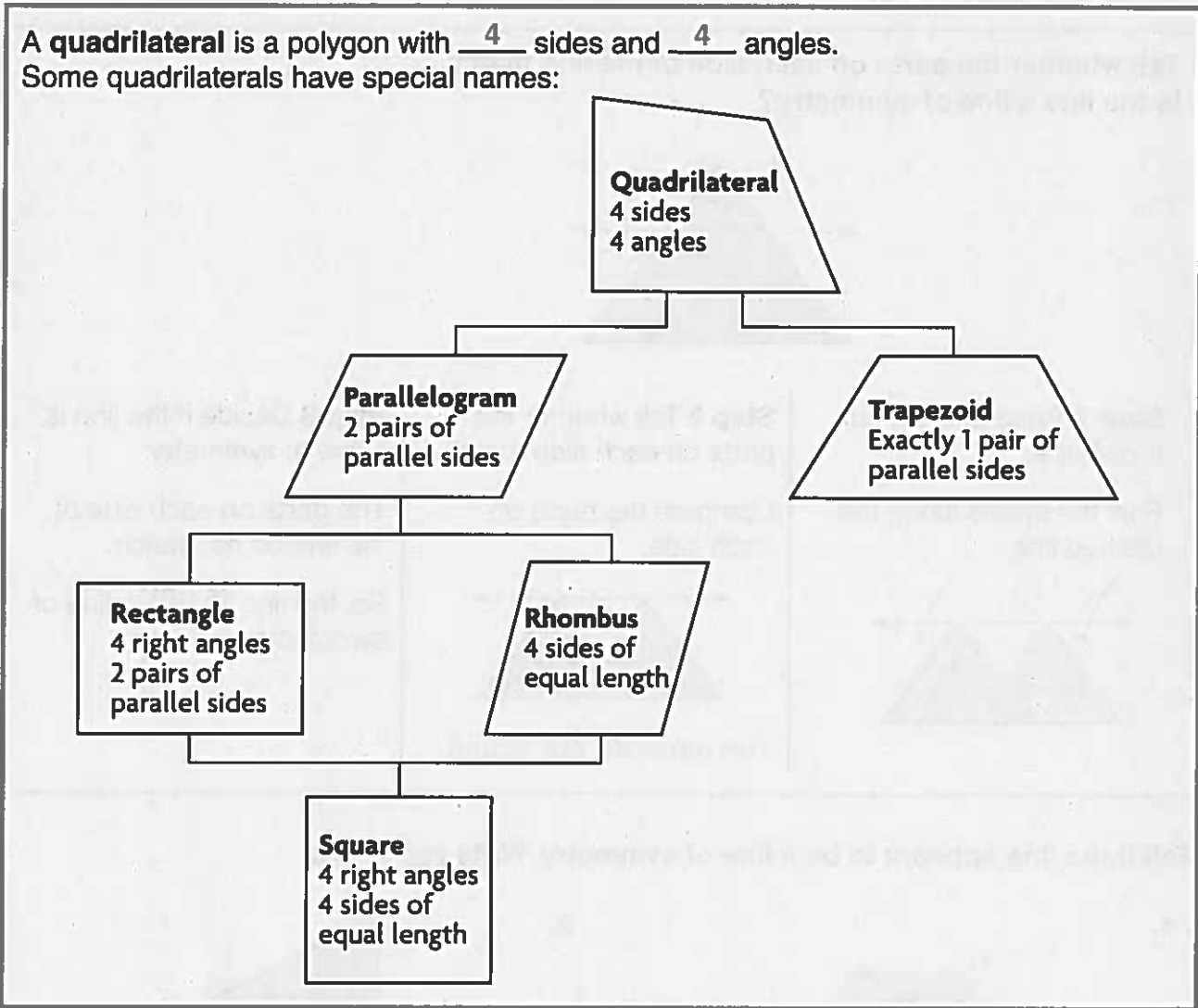
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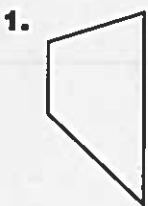
Name \_\_\_\_\_

# Classify Quadrilaterals

A **quadrilateral** is a polygon with 4 sides and 4 angles.  
Some quadrilaterals have special names:



Classify each figure as many ways as possible. Write *quadrilateral, trapezoid, parallelogram, rhombus, rectangle, or square.*

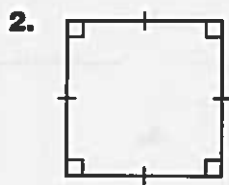



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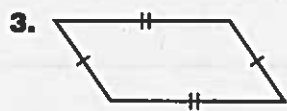



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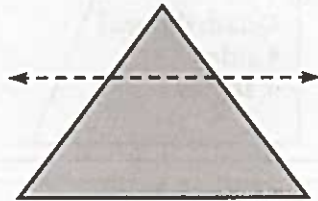
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Name \_\_\_\_\_

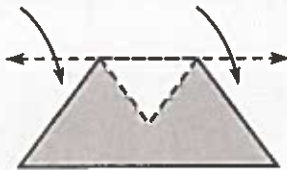
# Line Symmetry

Tell whether the parts on each side of the line match.  
Is the line a line of symmetry?



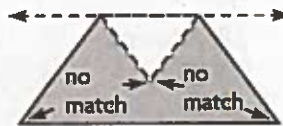
**Step 1** Trace and cut out the shape.

Fold the shape along the dashed line.



**Step 2** Tell whether the parts on each side match.

Compare the parts on each side.



The parts do not match.

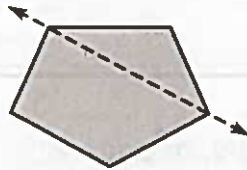
**Step 3** Decide if the line is a line of symmetry.

The parts on each side of the line do not match.

So, the line is not a line of symmetry.

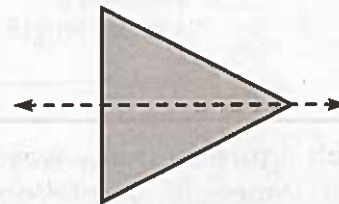
Tell if the line appears to be a line of symmetry. Write *yes* or *no*.

1.



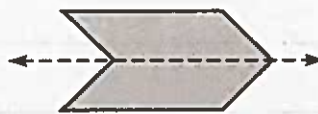
\_\_\_\_\_

2.



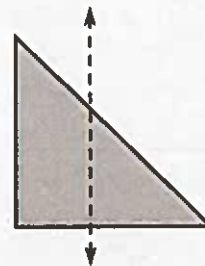
\_\_\_\_\_

3.



\_\_\_\_\_

4.



\_\_\_\_\_

Name \_\_\_\_\_

# Find and Draw Lines of Symmetry

Tell whether the shape appears to have zero lines, 1 line, or more than 1 line of symmetry. Write zero, 1, or more than 1.



**Step 1** Decide if the shape has a line of symmetry.

Trace and cut out the shape. Fold the shape along a vertical line.



Do the two parts match exactly? yes

**Step 2** Decide if the shape has another line of symmetry.

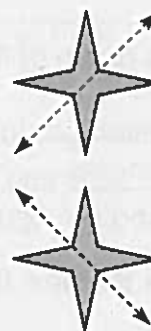
Open the shape and fold it along a horizontal line.



Do the two parts match exactly? yes

**Step 3** Find any other lines of symmetry.

**Think:** Can I fold the shape in other ways so that the two parts match exactly?



I can fold the paper diagonally two different ways, and the parts match exactly.

So, the shape appears to have more than 1 line of symmetry.

Tell whether the shape appears to have zero lines, 1 line, or more than 1 line of symmetry. Write zero, 1, or more than 1.

1.



\_\_\_\_\_

2.



\_\_\_\_\_

3.



\_\_\_\_\_

Name \_\_\_\_\_

## Problem Solving • Shape Patterns

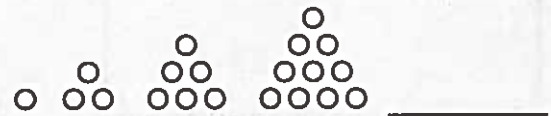
Use the strategy *act it out* to solve pattern problems.

What might be the next three figures in the pattern below?



Read the Problem		
<p><b>What do I need to find?</b></p> <p>I need to find the next three <u>figures</u> in the pattern.</p>	<p><b>What information do I need to use?</b></p> <p>I need to look for <u>a group of figures</u> that repeat.</p>	<p><b>How will I use the information?</b></p> <p>I will use pattern blocks to model the <u>pattern</u> and act out the problem.</p>
Solve the Problem		
<p>Look for a group of figures that repeat and circle that group.</p> <p>The repeating group is <u>triangle, triangle, square, triangle, square</u>.</p> <p>I used <u>triangles</u> and <u>squares</u> to model and continue the pattern by repeating the figures in the group.</p> <p>These are the next three figures in the pattern:     <u>    </u> <u>    </u> <u>    </u></p>		

1. Describe the pattern shown at right. Draw what might be the next figure in the pattern.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Use the pattern. How many circles will be in the sixth figure?

\_\_\_\_\_