


Name \_\_\_\_\_ Date \_\_\_\_\_

## Two-Dimensional Figures (pages 370–373)

A polygon is a closed figure formed by three or more line segments. A polygon with all the sides congruent and all the angles congruent is called a **regular polygon**. A regular triangle (3 sides) is also called an **equilateral triangle**. In a regular quadrilateral (4 sides), also called a square, the opposite sides are **parallel**. Parallel lines will never meet, no matter how far they are extended.

<b>Identifying Polygons</b>	A triangle has 3 sides.	A quadrilateral has 4 sides.
	A pentagon has 5 sides.	A hexagon has 6 sides.
	An octagon has 8 sides.	A decagon has 10 sides.

### EXAMPLES

**A** Is this figure a quadrilateral?   
 Is it a parallelogram?  
*Yes, it has 4 sides so it is a quadrilateral. Yes, the opposite sides are parallel, so it is a parallelogram.*

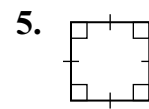
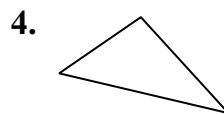
**B** In the figure for Example A, are all the angles congruent? Are the sides? Is this figure a regular polygon?  
*Yes, all the angles are right angles so they are congruent. No, the length is greater than the width, so the sides are not congruent and it is not a regular polygon.*

### Try These Together

- How many congruent angles does a regular decagon have?  
*HINT: What does “regular” mean? How many sides does a decagon have? Think of the word “decimal” to help you remember the sides of a “decagon.”*
- What do you know about a figure if you know that it is a regular hexagon?  
*HINT: How many sides does it have? What is true of all the sides and all the angles?*

### PRACTICE

**Name each polygon. Then tell if the polygon is a regular polygon.**



6. How many sides does a regular octagon have?



7. **Standardized Test Practice** Embry’s father is building a storage shed in their backyard. The floor will be the shape of a square. If the perimeter of the floor is 40 feet, how long is each side?

- A** 20 feet      **B** 15 feet      **C** 10 feet      **D** 30 feet

Answers: 1. 10 2. It has 6 congruent sides and 6 congruent angles. 3. pentagon; yes 4. triangle; no 5. square; yes 6. 8 7. C