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| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_**Lesson 48** Geometry |

**Opening Exercise**

A **regular polygon** is a closed figure in which all sides (and angles) are congruent.

Given below is a **regular hexagon**



1. Find the sum of the interior angles of this hexagon
2. Find the measure of each interior angle
3. Find the measure of one exterior angle
4. Find the sum of the measures of the exterior angles

Given below is a **regular heptagon**



1. Find the sum of the interior angles of this hexagon
2. Find the measure of each interior angle
3. Find the measure of one exterior angle
4. Find the sum of the measures of the exterior angles

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| **Angles of Regular Polygons**Sum of Interior Angles: Each Interior Angle:Sum of Exterior Angles:Each Exterior Angle: |

**Practice Exercises**

1. If each interior angle of a regular polygon measures 160o,

how many sides does the polygon have?

1. What is the measure of *each* exterior angle of a regular nonagon?
2. If each exterior angle measures 30o, how many sides

does the polygon have?

1. The measure of each exterior angle of a regular polygon is twice the

measure of each interior angle. How many sides does the polygon have?

1. The number of sides of a regular polygon for which the measure of

an interior angle is equal to the measure of an exterior angle is:

(1) 8 (2) 6 (3) 3 (4) 4

1. Which of the following could *not* represent the measure of an exterior

angle of a regular polygon?

(1) 72 (2) 15 (3) 27 (4) 45