Measure each angle and then find the sum of the interior angles for each figure.

Triangles:

Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_

Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_

Quadrilaterals:

Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_

Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_

Pentagons:

Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_

Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_

Hexagon:

Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_

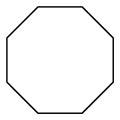
Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_

Heptagon:

Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_

Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_

Octagon:



Sum of Interior: \_\_\_\_\_\_\_\_ Sum of Interior: \_\_\_\_\_\_\_\_

Sum of Exterior: \_\_\_\_\_\_\_\_ Sum of Exterior: \_\_\_\_\_\_\_\_

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sum of Interior & Exterior Angles of a Polygon

1. What do you notice about the sum of the interior angles of different polygons? Write down any thought that you have.
2. What predictions can be made for the sum of the interior angles for a nonagon and a decagon?
3. Derive a formula for the sum of the interior angles with *n* sides. Explain how you derived the formula for the sum of the interior angles.

An exterior angle is represented by the angle formed by extending the sides of the polygon, as shown.

ext. ∢

ext. ∢

ext. ∢

ext. ∢

ext. ∢

ext. ∢

ext. ∢

1. Measure the exterior angles on each figure and then find the sum of the exterior angles.

What generalization can be made about the sum of the exterior angles?

