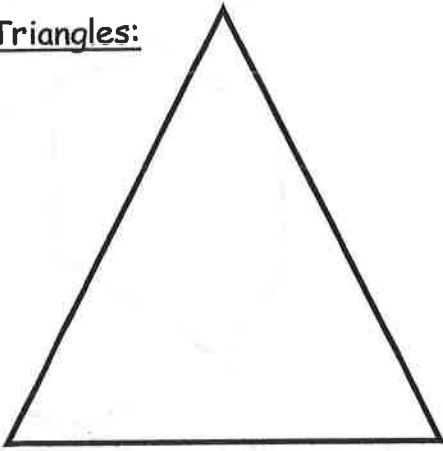
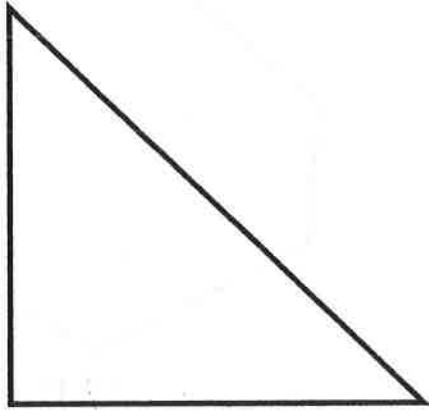


Measure each angle and then find the sum of the interior angles for each figure.

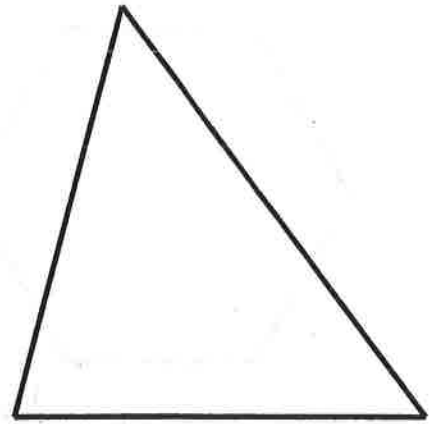
Triangles:



Sum of Interior: 180
Sum of Exterior: 360

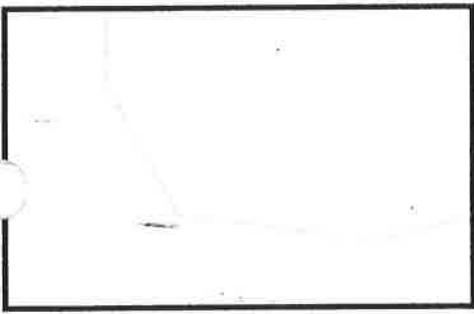


Sum of Interior: 180
Sum of Exterior: 360

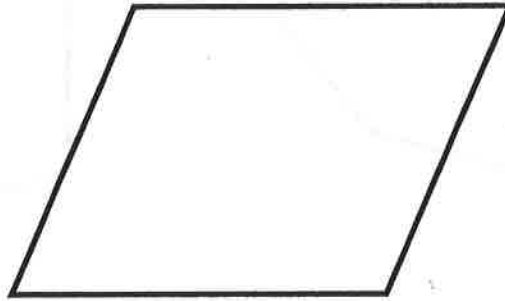


Sum of Interior: 180
Sum of Exterior: 360

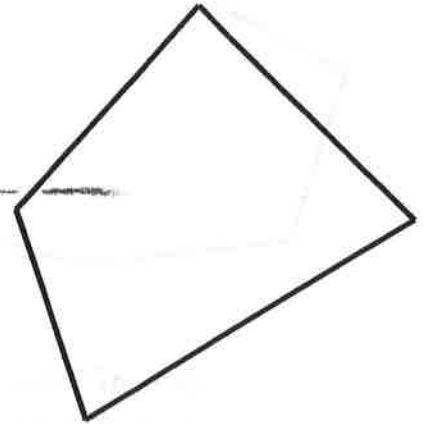
Quadrilaterals:



Sum of Interior: 360
Sum of Exterior: 360

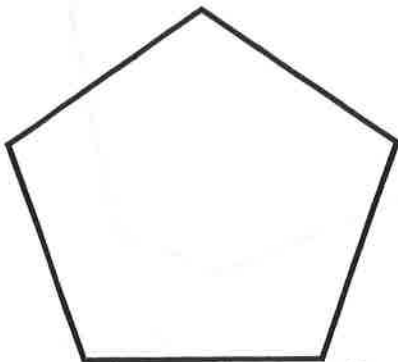


Sum of Interior: 360
Sum of Exterior: 360

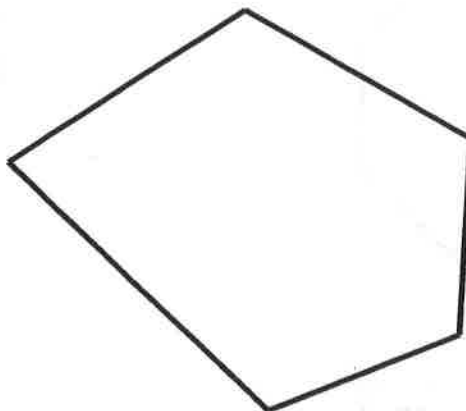


Sum of Interior: 360
Sum of Exterior: 360

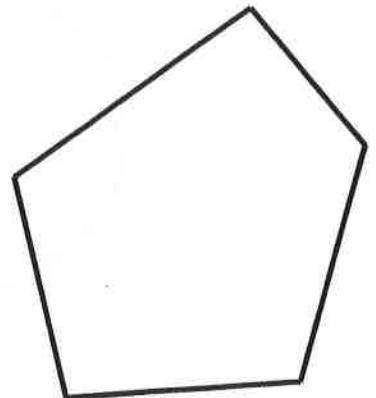
Pentagons:



Sum of Interior: 540
Sum of Exterior: 360



Sum of Interior: 540
Sum of Exterior: 360



Sum of Interior: 540
Sum of Exterior: 360

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.

they are $180(n-2)$

2. What predictions can be made for the sum of the interior angles for a nonagon and a decagon?

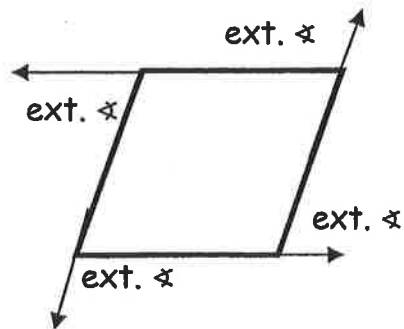
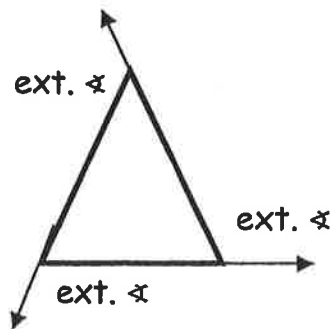
nonagon 1260

decagon 1440

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.

$$180(n-2)$$

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



4. 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?

all are 360°