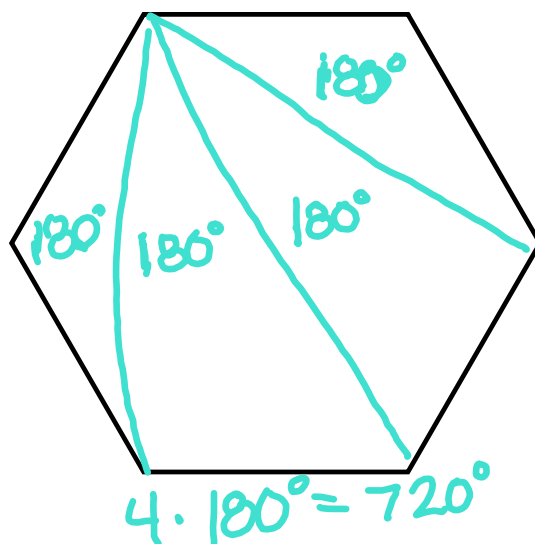
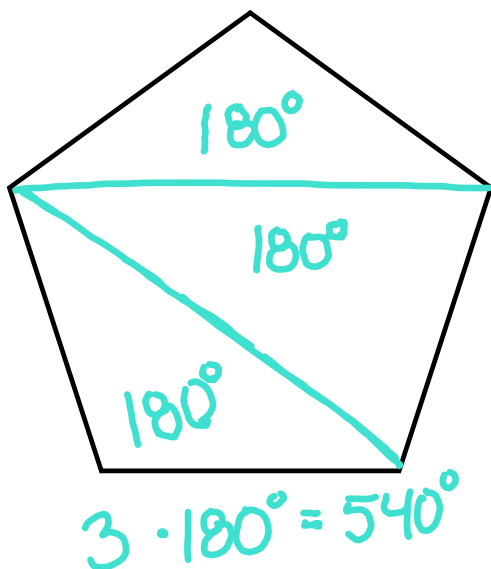
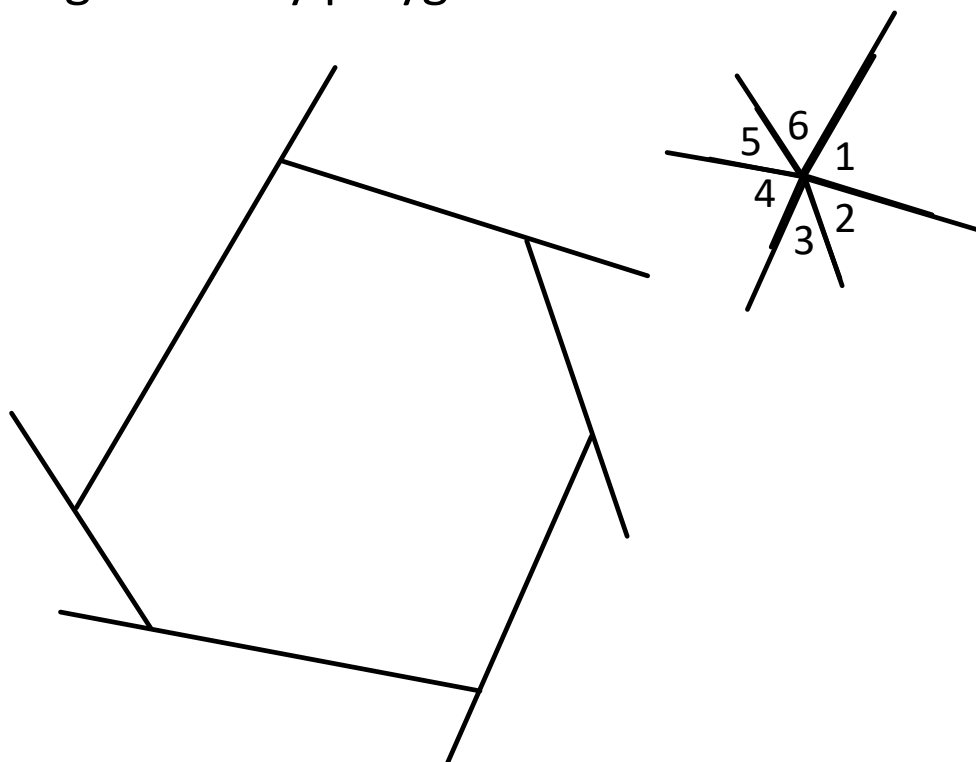


Sum of the measures of the INTERIOR angles of any polygon $= (n-2)180^\circ$
* Where $n = \#$ of sides



Sum of the measures of the EXTERIOR angles of any polygon $= 360^\circ$



A Regular Polygon is one that is both equilateral and equiangular

Measure of EACH EXTERIOR angle of a regular polygon = $\frac{360}{n}$

Measure of EACH INTERIOR angle of a regular polygon = $\frac{(n-2)180^\circ}{n}$

$$= \frac{180n - 360}{n}$$

$$180 - \frac{360}{n}$$

A hexagon has interior angles in the ratio of 5 : 2 : 3 : 1 : 4 : 3. What are the measures of each of the interior angles?

$$(n-2)180 = 4 \cdot 180 = 720^\circ$$

$$5x + 2x + 3x + x + 4x + 3x = 720^\circ$$

200°
80°
120°
40°
160°
120°

$$18x = 720$$

$$x = 40$$

What is the measure of each interior angle
in a regular octagon?

$$n = 8$$

$$\frac{(n-2)180}{n} = \frac{6 \cdot 180}{8} = 135^\circ$$

$$180 - \frac{360}{8} = 135^\circ$$

What is the measure of each exterior angle
in a regular decagon?

$$n = 10$$

$$\frac{360}{10} = 36^\circ$$

If the measure of each exterior angle in a regular polygon is 72° , then what kind of polygon is it?

$$\text{ext } \angle = \frac{360}{n}$$

$$72^\circ = \frac{360}{n}$$

$$72n = 360$$

$$n = 5$$



If the measure of each exterior angle in a regular polygon is 30° , then what is the sum of the interior angles?

$$\text{ext} = \frac{360}{n}$$

$$30 = \frac{360}{n}$$

$$30n = 360$$

$$n = 12$$

$$(12-2)180 = 1800^\circ$$