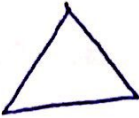
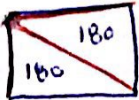

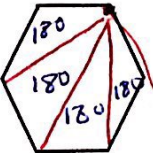


Main Ideas/ Questions	Notes	6.1
Interior Angle Sum	The <u>sum of degrees</u> in <u>any polygon</u> can be determined by the <u># of triangles</u> <u>that can be drawn</u> within the polygon.	Complete the table below and look for a pattern to find the sum of the degrees in any polygon.

Polygon	Picture	# of Sides	# of Triangles	Sum of Interior \angle 's
Triangle		3	1	180°
Quadrilateral		4	2	360°
Pentagon		5	3	540°
Hexagon		6	4	720°
Heptagon	X	7	5	900°
Octagon	X	8	6	1080°
146 -gon	X	146	144	25920°
175 -gon	X	175	173	31140°

<u>Equilateral</u> all sides are equal	<u>Equiangular</u> all angles are equal	<u>Regular Polygon</u> all sides <u>and</u> angles are equal
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Sum of Interior Angles Formula

If S represents the ~~sum of interior angles~~ then the sum of the interior angles (S) can be found using the formula: $S = (n-2)180$

INTERIOR ANGLE OF A Regular Polygon

A Regular Polygon is one in which all sides are equal therefore all angles are equal! To find the measure of an interior angle in a regular polygon, use:
 $E = \frac{(n-2)180}{n}$

Interior Angles Practice!

1. Find the sum of the interior angles of a 15-gon.

$$S = (n-2)180$$

$$S = (15-2)180$$

$$= 2340^\circ$$

2. Find the sum of the interior angle of a 21-gon.

$$S = (n-2)180$$

$$S = (21-2)180$$

$$= 3420^\circ$$

3. What is the measure of each interior angle of a regular pentagon?

$$E = \frac{(n-2)180}{n}$$

$$= \frac{(5-2)(180)}{5}$$

$$= 108^\circ$$

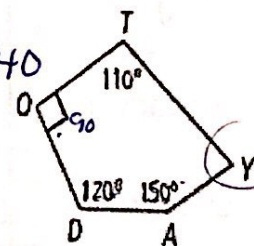
4. What is the $m\angle Y$ in pentagon TODAY?

$$S = (5-2)180 = 540$$

$$(110 + 90 + 120 + 150) + y = 540$$

$$470 + y = 540$$

$$\begin{array}{r} 470 + y = 540 \\ -470 = -470 \\ \hline y = 70^\circ \end{array}$$



5. Find the $m\angle B$.

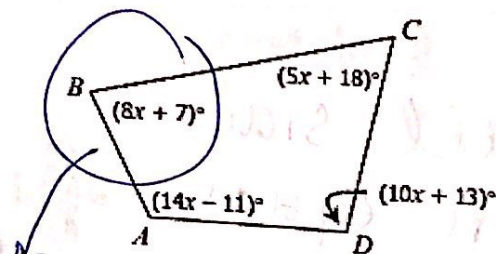
$$S = (4-2)180 = 360$$

$$\underline{8x+7} + \underline{5x+18} + \underline{10x+13} + \underline{14x-11} = 360$$

$$37x + 27 = 360$$

$$\begin{array}{r} 37x + 27 = 360 \\ -27 -27 \\ \hline 37x = 333 \end{array}$$

$$\frac{37x}{37} = \frac{333}{37} \quad x = 9$$



$$8(9)+7$$

$$72+7 = 79^\circ$$