Geometry – A   Name: _____

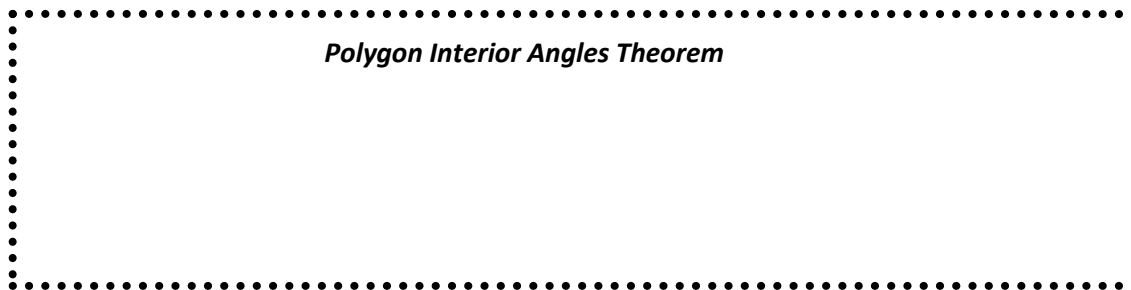8.1 Polygon Angle Investigations   Per:_____   Date: _____

- I can discover the formula for the sum of the **interior** angles of a polygon.
- I can discover the formula for the sum of the **exterior** angles of a polygon.

PLEASE USE THIS LINK TO WATCH THE VIDEO AND FILL OUT THE FOLLOWING NOTES:

https://youtu.be/9aTDWSc6A_E   (There's an underscore between the A and E)

# of sides = # of triangles = Sum of interior angles =	# of sides = # of triangles = Sum of interior angles =	# of sides = # of triangles = Sum of interior angles =
# of sides = # of triangles = Sum of interior angles =	# of sides = # of triangles = Sum of interior angles =	# of sides = # of triangles = Sum of interior angles =

Polygon Interior Angles Theorem

Example 1:   Example 2:

# of sides = Sum of exterior angles =	# of sides = Sum of exterior angles =	# of sides = Sum of exterior angles =

Polygon Exterior Angles Theorem
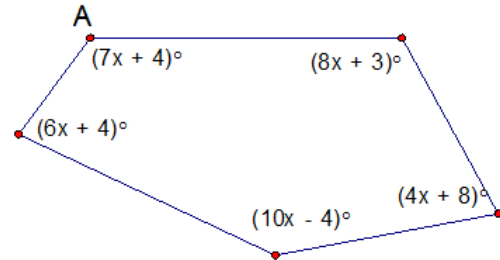
Example 3:   Example 4:

Try these on your own. Answers are on the back. If you need additional help, please let me know.

1) Please find the sum of the measures of the interior angles of a 21-gon.

2) Please find the measure of $\angle A$ in the diagram shown.

A

$(7x + 4)°$ $(8x + 3)°$

$(6x + 4)°$

$(4x + 8)°$

$(10x - 4)°$

3) The sum of the measures of the interior angles of a convex polygin is 1440°. Please determine how many sides make up this polygon.

4) Find the sum of the measures of the exterior angles of a convex octagon.

Answers to Additional Examples:
1) 3,420°
2) 109°
3) 10
4) 360°