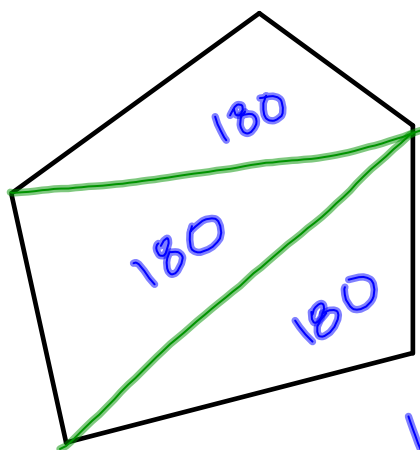
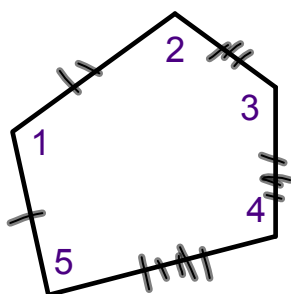


Bellwork:

Have your worksheet out and ready to turn in.

Chapter 8.1: Find Angle Measures in Polygons



$$\angle 1 + \angle 2 + \angle 3 + \angle 4 + \angle 5 =$$

$$180(3)$$
$$\boxed{540^\circ}$$

Polygon Interior Angles Theorem-

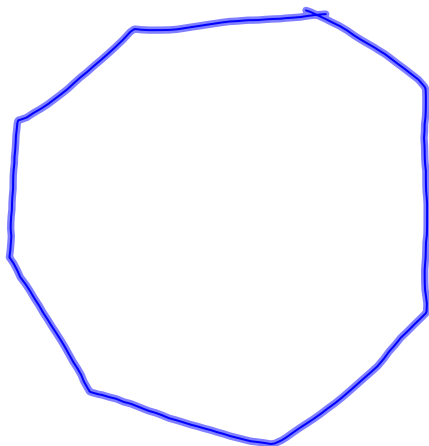
The sum of the measures of the interior angles of a convex n -gon is $(n-2) \times 180$.

Corollary- Interior Angles of a Quad

The sum of the measures of the interior angles of a quadrilateral is 360°

4 sided polygons

ex. Find the sum of the measures of the interior angles of a convex octagon.



$$(n-2)180$$
$$(8-2)(180)$$
$$6(180)$$

$$4180$$
$$\begin{array}{r} 6 \\ \hline 1080^\circ \end{array}$$

ex. The sum of the measures of the interior angles of a convex polygon is 900° . Classify the polygon by sides. (names on pg.43)

$$\frac{180(n-2)}{180} = \frac{900}{180}$$

$$n-2 = 5$$

$$\begin{array}{r} +2 \\ +2 \end{array}$$

$$n = 7$$

heptagon

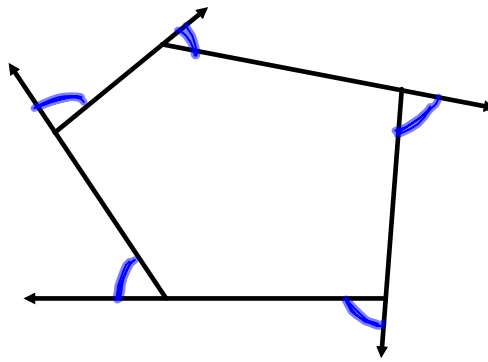
find the measure for x.



$$108 + 121 + 59 + x = 360$$

$$\begin{array}{r} 288 + x = 360 \\ -288 \quad -288 \end{array}$$

$x = 72^\circ$



Polygon Exterior Angles Theorem-

The sum of the measures of the exterior angles of a convex polygon, one angle at each vertex, is 360° .

What is the value for x?

A diagram of a triangle with three exterior angles. The top-left exterior angle is labeled 89° , the top-right exterior angle is labeled 67° , and the bottom exterior angle is labeled x° . The interior angle at the bottom vertex is labeled $2x^\circ$. Handwritten work in green and blue ink shows the solution:

$$2x + x + 67 + 89 = 360$$

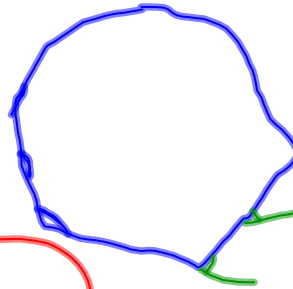
$$3x + 156 = 360$$

$$\begin{array}{r} 3x + 156 = 360 \\ -156 \quad -156 \\ \hline 3x = 204 \\ \hline x = 68 \end{array}$$

ex. A trampoline is shaped like a regular dodecagon. Find the measure of an interior angle and an exterior angle.

$$180(12-2)$$
$$180(10)$$

$$\frac{1800}{12} = 150^\circ$$



$$\frac{360}{12} = 30^\circ$$

Homework: Ch 8.1 pg.510

#'s 4,8,12,16,18,24,28