§10.1 Polygons

- Definitions:
  - Polygon
    - A plane figure that…
      - Is formed by _____ called sides and…
      - ..each side intersects _____ other sides, one at each _____.

| Polygon | Not a Polygon |

§10.1 Polygons

Definitions…

- Convex
  - No line that contains a side of the polygon also contains a point in the interior of the polygon.
- Concave
  - Not convex (also called nonconvex)
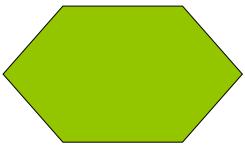 - Has a "cave in"

§10.1 Polygons

- Equilateral
  - All sides are congruent
- Equiangular
  - All angles are congruent
- Regular
  - Both equilateral AND equiangular

§10.1 Polygons

- Diagonal
  - A segment that joins two _____.

§10.1 Polygons

Names of Polygons

Name	Number of Sides
	3
	4
	5
	6
	7
	8
	9
	10
	12
	n

§10.1 Polygons

Interior Angles

- Polygon Interior Angles Theorem
  - The sum of the measures of the interior angles of a convex polygon is _____

- Corollary to Polygon Interior Angles Theorem
  - The measure of each interior angle of a regular n-gon is: _____

§10.1 Polygons

Exterior Angles

- Polygon Exterior Angles Theorem
  - The sum of the measures of the exterior angles of a convex polygon (one angle at each vertex) is _____.
- Corollary to Polygon Exterior Angles Theorem
  - The measure of each exterior angle of a regular n-gon is _____

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§10.1 Polygons

Practice

- If each interior angle of a regular n-gon is 108°, how many sides does the polygon have?

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§10.1 Polygons

Practice

- Find the value of x.

$(63x + \frac{1}{2})°$

$(89x - 1)°$

$(45x - 1)°$

$(64x + \frac{1}{2})°$

$(40x + 41)°$

$(39x)°$