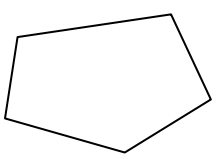
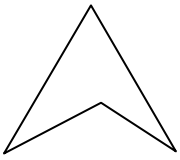
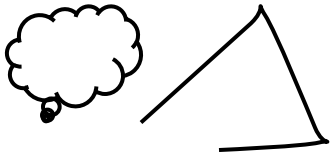
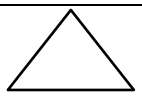
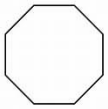
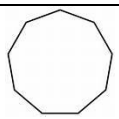
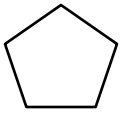
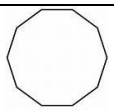
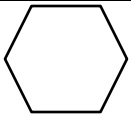
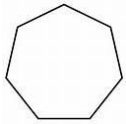
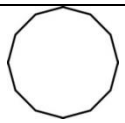
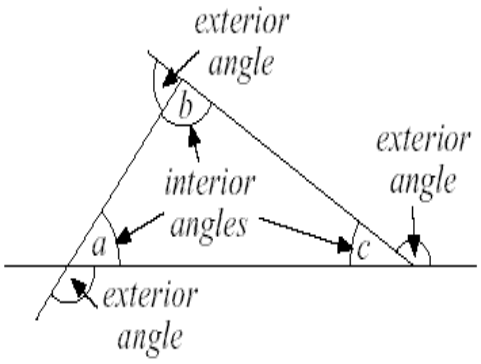
# TOPIC 10-5: INTERIOR & EXTERIOR ANGLES OF POLYGONS

| | | | |
|---|---|---|---|
| **Polygon** | A closed figure formed by segments, called sides, which intersect with other sides at their endpoints. Polygons can be convex or concave. | | |
| **Polygons** |  **convex**  **concave** | **NOT Polygons** |  |

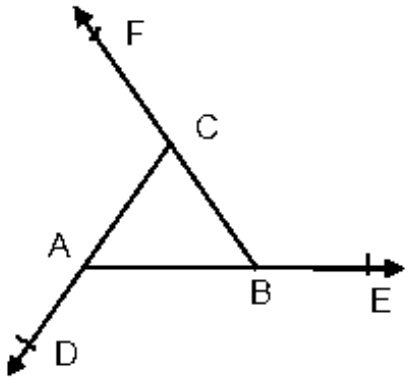
**Polygons are named by the number of _____**

| # SIDES | NAME | PICTURE | # SIDES | NAME | PICTURE |
|---|---|---|---|---|---|
| | TRIANGLE |  | | OCTAGON |  |
| | QUADRILATERAL | | | NONAGON |  |
| | PENTAGON |  | | DECAGON |  |
| | HEXAGON |  | | UNDECAGON | |
| | HEPTAGON |  | | DODECAGON |  |

| | |
|---|---|
| | n-GON |

| Term | Definition | Sketch |
|---|---|---|
| **Interior Angles** | **Angles formed by two _____ sides of a polygon.** |  |
| **Exterior Angles** | **Angles formed by a side of a polygon and the _____ of an adjacent side.** | |






Name the interior angles of the triangle to the left.

_____

Name the exterior angles of the triangle to the left.

_____

T**he SUM of INTERIOR** angles of a polygon with n sides is:

SUM
INTERIOR =

**The SUM of EXTERIOR** angles of a polygon with n sides is:

SUM
EXTERIOR =

**PRACTICE 1:** Find the sum of the interior angles and the sum of the exterior angles of an undecagon.

SUM INT = _____ SUM EXT = _____

**PRACTICE 2:**
Find the sum of the interior angles and the sum of the exterior angles of a 20-gon.

SUM INT = _____ SUM EXT = _____

| Term | Definition | Sketch |
|---|---|---|
| **Regular Polygon** | **A polygon that is both equilateral and equiangular** | |

The measure of **EACH INTERIOR** angle of a *regular* polygon with n sides is:

EACH
INTERIOR =

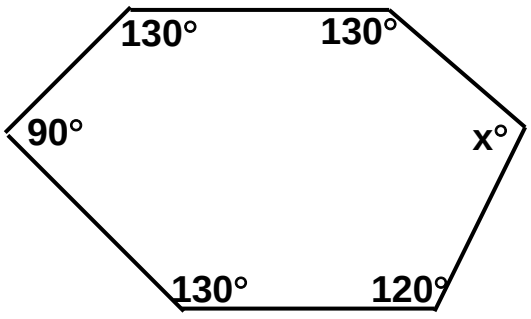
The measure of **EACH EXTERIOR** angle of a *regular* polygon with n sides is:

EACH
EXTERIOR =

**PRACTICE 3:**
Find the measure of ***each*** of the interior angles and each of the exterior angles of a regular, convex dodecagon.

EACH INT = _____ EACH EXT = _____

**PRACTICE 4:** Find the missing angle.




x = _____