

Geometry SOL Practice

Topic #5: Angles with Polygons

Notes

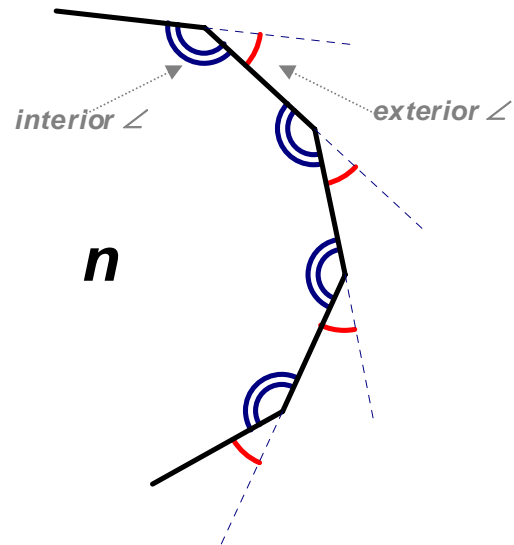
Vocabulary:

| # of sides | name | # of sides | name | # of sides | name |
|------------|---------------|------------|----------|------------|-----------|
| 3 | triangle | 6 | hexagon | 9 | nonagon |
| 4 | quadrilateral | 7 | heptagon | 10 | decagon |
| 5 | pentagon | 8 | octagon | 12 | dodecagon |

Finding Angle Measures of Regular Polygons:

General Steps:

- Sketch an “unfinished” polygon with exterior angles. Write the number of sides (n) of the polygon on its center.
- Sum of the Exterior Angles** = 360°
[memorize this fact]
- Each Exterior Angle** = $\frac{360^\circ}{n}$
- Each Interior Angle** = $180^\circ - \text{Exterior } \angle$
- Sum of the Interior Angles** (2 options)
 - (each Interior \angle)(n)
 - $(n-2)180^\circ$



Example: Find the angles of a regular decagon.

- Sketch an “unfinished” decagon with exterior angles. Write the number 10 on its center.
- Sum of the Exterior Angles** = 360°
- Each Exterior Angle** = $\frac{360^\circ}{10} = 36^\circ$
- Each Interior Angle** = $180^\circ - 36^\circ = 144^\circ$
- Sum of the Interior Angles** (2 options)
 - $(144^\circ)(10) = 1440^\circ$
 - $(10-2)180^\circ = 1440^\circ$

