

Exterior Angles

Exterior angles are always Supplementary ($= 180^\circ$) with their interior angle

Directions: On the polygons below, find each exterior angle and the sum of all exterior angles.

Triangle:

Sum of Exterior Angles:
360

Quadrilateral:

Sum of Exterior Angles:
360

Pentagon:

Sum of Exterior Angles:
360

Hexagon:

Sum of Exterior Angles:
360

Exterior Angles Sum

The exterior angles of ANY polygon sum to

360°

1. What is the measure of each exterior angle of a regular hexagon?

$$\frac{360}{n} \quad \frac{360}{6} = 60^\circ$$

2. What is the measure of each exterior angle of a regular 24-gon?

$$\frac{360}{24} = 15^\circ$$

3. If the exterior angle of a regular polygon measures 12° , how many sides does the polygon have?

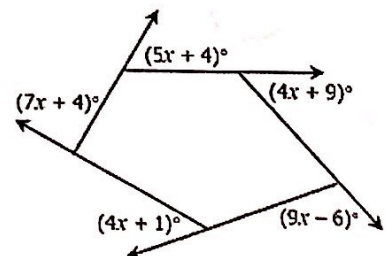
$$12 = \frac{360}{n}$$

$$12n = 360$$

$$n = \frac{360}{12}$$

$$n = 30$$

4. Solve for x.



$$5x + 4 + 4x + 9 + 9x - 6 + 7x + 4 = 360$$

$$29x + 12 = 360$$

$$29x = 348$$

$$x = 12$$