Name Answer Key Geometry/Lab

Review of Polygons

1)

The sum of the measures of the interior angles of an octagon is

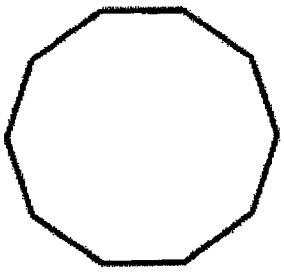
1) 180°
2) 360°
3) 540°
4) 1,080°

$n=8$

$180(n-2)$
$180(8-2)$
$180(6)$
1080

2)

Find the sum of the measures of the interior angles in the figure.



$n=10$

$180(n-2)$
$180(10-2)$
$180(8)$
$1,440$

3)

Find the measure of one of the interior angles of a regular polygon with ten sides.

[A] 18° [B] 36° [C] 162° [D] 144°

$n=10$

$\frac{360}{10} = 36$ each ext ∠

$180 - 36 = 144$

int ∠ / ext ∠

int ∠ + ext ∠ = 180°

$\frac{360}{n} = \text{each ext } \measuredangle$ (or) $\frac{360}{\text{ext } \measuredangle^\circ} = n$

4)

Find the measure of an interior angle and an exterior angle of a regular polygon with 40 sides.

$n = 40$ $\quad \frac{360}{40} = 9$ each ext $\measuredangle$ $\quad \frac{180}{-\ 9}$

171 each int $\measuredangle$

5)

Find the number of sides the polygon has if the measure of an exterior angle is 22.5 degrees.

$\frac{360}{22.5^\circ} = 16$ sides

6)

Find the number of sides the polygon has if the measure of each interior angle is 160 degrees.

$180 - 160$ int $\measuredangle = 20$ ext $\measuredangle$ $\quad \frac{360}{20^\circ} = 18$ sides

7)

Find the sum of the exterior angles of a 25 sided polygon.

360°

8)

Find the sum of the interior angles of a 20 sided polygon.

Sum int ∠'s = $180(n-2)$

$180(20-2)$

$180(18)$

$3,240$

9)

Find each interior angle of a regular dodecagon.

$n = 12$

$\frac{360}{12} = 30$ ext ∠

$180 - 30$ ext ∠

150 int ∠

10)

Find one exterior angle of a regular 20 sided figure.

$\frac{360}{20} = 18^\circ$