*Show work for full credit*

*10.4 – 10.5 Angles in a Polygon*
*Pre-AP Geometry Homework*

Name ~~Answer~~ Key
Period _____ Date _____

1. Each angle of an equiangular triangle has a measure of 60°.

2. An interior angle of any polygon + its adjacent exterior always = 180°.

3. Find the sum of the exterior angles of a convex heptagon.

360°

4. The measure of each exterior angle of a regular polygon is 45°. Name the polygon.

n = 8
octagon

5. One interior angle of a regular polygon is 162°. Find the number of sides.

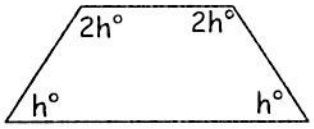
n = 20 sides

6. The measure of each interior angle of a regular polygon is eleven times that of an exterior angle. How many sides are in the polygon?

n = 24 sides

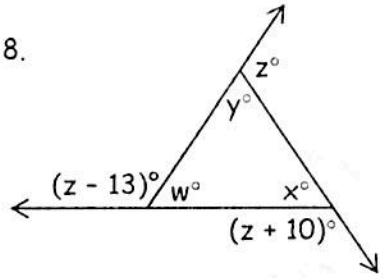
**Find the value of each variable in the following problems.**

7.



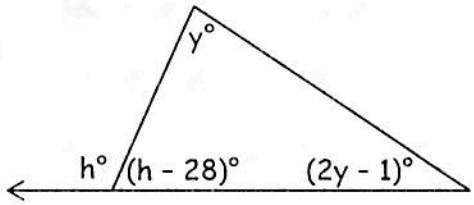

h = 60

8.



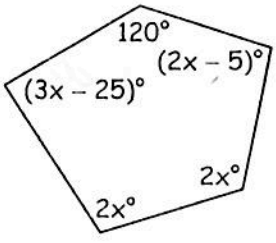

z = 119 y = 61 x = 51 w = 74

9.



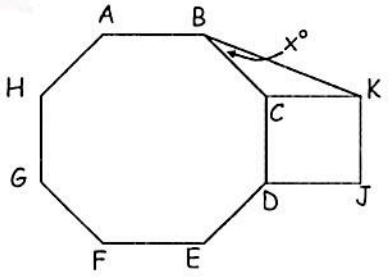

h = 104 y = 35

10.




x = 50

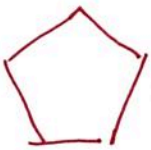
11. Given that ABCDEFGH is a regular octagon and CDJK is a square. ($x°$ is measure of $\angle CBK$) Find the measure of $x°$.




$X = 22.5$

12. Find the measure of each exterior angle of a convex pentagon if the measure of the interior angles are $x - 10$, $2x - 5$, $2x + 15$, $x$, and $x - 20$.

$X = 80$



$X - 10 \rightarrow 110°$

$2x - 5 \rightarrow 25°$

$2x + 15 \rightarrow 5$

$X \rightarrow 100°$

$X - 20 \rightarrow 120°$

13. Find the number of sides of a regular polygon is the measure of each interior angle is 140°.

$n = 9$ sides

14. The ratio of the interior angles of a hexagon are 5:2:3:4:5:6. Find the measure of the largest angle of the hexagon.

$X = 28.8°$

$6x = 172.8°$

15. The sum of the measures of the interior angles of a polygon is five times the sum of its exterior angles, one angle at each vertex. How many sides does the polygon have? What is this polygon called?

$n = 12$

Dodecagon