
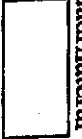






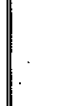
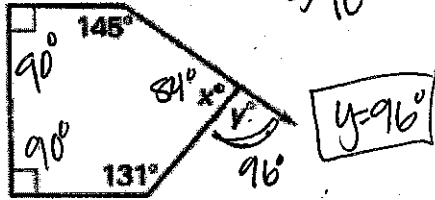


Name of polygon	Number of Sides	Number of Diagonals from a vertex	Number of triangles in polygon	Sum of interior angles	Measure of one interior angle (Regular Only)	Measure of one exterior angle (Regular Only)	Sum of exterior angles
Triangle 	3	0	1	180°	60°	120°	360°
Quadrilateral 	4	1	2	360°	90°	90°	360°
Pentagon 	5	2	3	540°	108°	72°	360°
Hexagon 	6	3	4	720°	120°	60°	360°
Heptagon 	7	4	5	900°	128.5°	51.5°	360°
Octagon 	8	5	6	1080°	135°	45°	360°
Nonagon 	9	6	7	1260°	140°	40°	360°
Decagon 	10	7	8	1440°	144°	36°	360°
n -gon 	n	$n-3$	$n-2$	$(n-2)180$	$\frac{(n-2)180}{n}$	$\frac{360}{n}$	360°

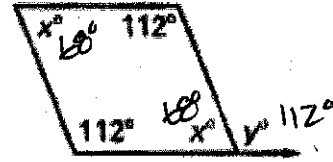
Homework: Polygon Angle Sums

1. Find the value of y.



$$540 - 456 = 84$$

2. Find the value of y.

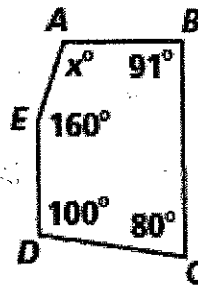


3. Find the sum of the interior angles in a 7-gon.

$$900^\circ$$

4. Find the value of x.

$$x = 109^\circ$$



5. Find the measure of each exterior angle in a regular 20-gon (icosagon).

$$n = 20$$

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

6. Find the sum of the interior angles in a 14-gon.

$$n = 14$$

$$(14 - 2) 180 = 2160^\circ$$

7. Find the sum of the exterior angles in a 100-gon.

$$360^\circ$$

8. The sum of the measures of the interior angles of a regular polygon is 2340° . How many sides does the polygon have?

$$(n - 2) 180 = 2340$$

$$n - 2 = 13$$

$$n = 15$$

9. One exterior angle of a regular polygon measures 10° . What is the measure of each interior angle? How many sides does the polygon have?

$$\frac{360}{n} = 10$$

$$10n = 360$$

$$n = 36$$

$$(36 - 2) 180 = 6120$$

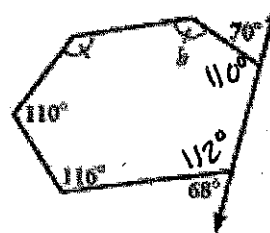
ma

$$180 - 10 = 170^\circ$$

$$\frac{6120}{36} = 170$$

10.

$$b = ?$$



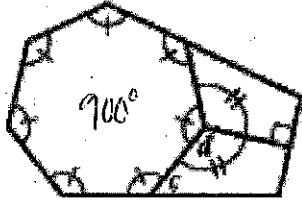
$$720 - 448$$

$$272$$

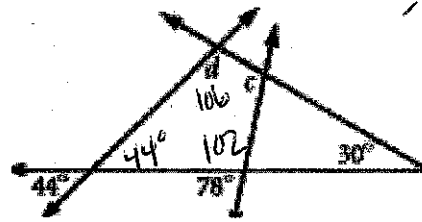
$$\frac{272}{2}$$

$$b = 136^\circ$$

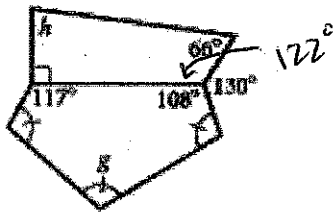
11. $c = 57.5^\circ$ $d = 115.75^\circ$



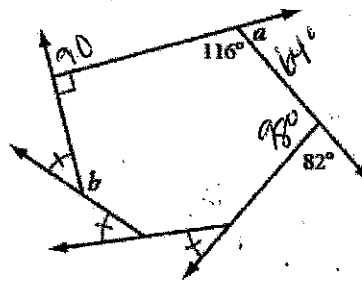
12. $c = 108^\circ$ $d = 106^\circ$



13. $g = 105^\circ$ $h = 82^\circ$



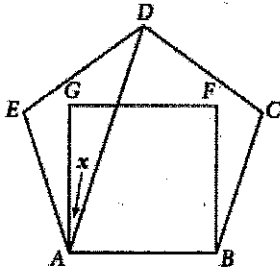
14. $a = 64^\circ$ $b = 126.7^\circ$



$23b + 3x = 360$
 $x = 41.3$

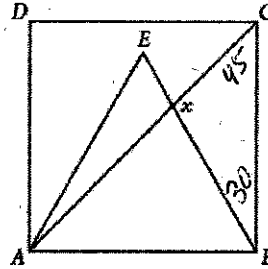
15. ABCDE is a regular pentagon. ABFG is a square.

$x = 15^\circ$

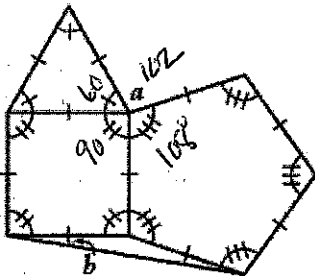


16. ABCD is a square. ABE is an equilateral triangle.

$x = 105^\circ$

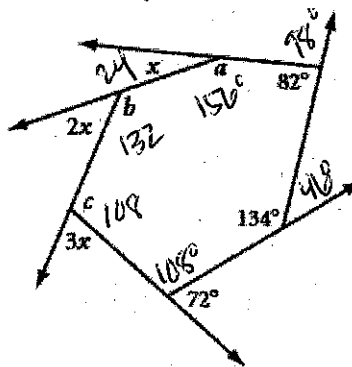


17. $a = 112^\circ$ $b = 90^\circ$



360
 -256

18. $a = 150^\circ$ $b = 132^\circ$ $c = 108^\circ$



$6x + 216 = 360$
 $6x = 144$
 $x = 24$