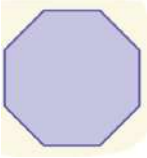


Warm Up

Find the sum of the interior angle measures of the polygon.

1) What's the equation for the sum of the interior angles?

2) 

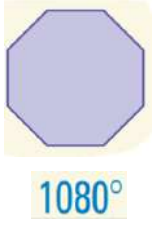
3) What is the sum of the exterior angles?

Warm Up

<https://www.mathsisfun.com/geometry/exterior-angles-polygons.html>

Find the sum of the interior angle measures of the polygon.

1) What's the equation for the sum of the interior angles? $S = (n-2)(180)$

2) 

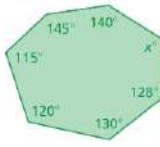

3) What is the sum of the exterior angles?
360 degrees

3.3. Angles of Polygons

L.O: I can find the missing measures of interior angles in polygons.

Formula for measure of interior angles
 $S = (n-2)(180)$

Find the value of x .

Find the value of x .

Step 1: The polygon has 7 sides. Find the sum of the interior angle measures.

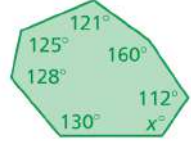
$S = (n - 2) \cdot 180^\circ$ Write the formula.
 $= (7 - 2) \cdot 180^\circ$ Substitute 7 for n .
 $= 900^\circ$ Simplify. The sum of the interior angle measures is 900°.

Step 2: Write and solve an equation.

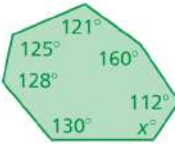
$140 + 145 + 115 + 120 + 130 + 128 + x = 900$
 $778 + x = 900$
 $x = 122$

❖ The value of x is 122.

Find the value of x .



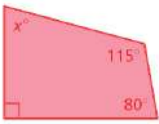
Find the value of x .



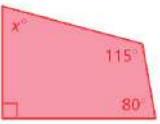
$S = (7-2)180$
 $S = 900$

$x + 130 + 128 + 125 + 121 + 160 + 112 = 900$
 $x + 776 = 900$
 $x = 124$

White Board

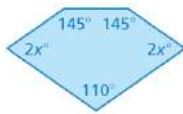


White Board

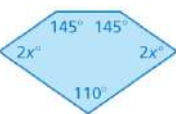


$S = (n-2)180$ $x + 90 + 115 + 80 = 360$
 $S = (4-2)180$ $x + 285 = 360$
 $S = 2(180)$ $- 285 \quad -285$
 $S = 360$ $x = 75$

White Board



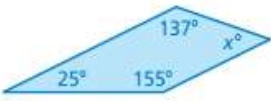
White Board



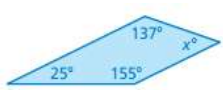
$S = (5-2)180$
 $S = 540$

$2x + 2x + 145 + 145 + 110 = 540$
 $4x + 400 = 540$
 $4x = 140$
 $x = 35$

White Board



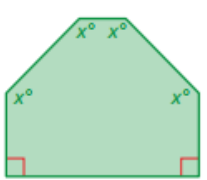
White Board



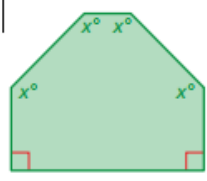
$S = (4-2)180$
 $S = 360$

$x + 155 + 25 + 137 = 360$
 $x + 317 = 360$
 $x = 43$

White Board



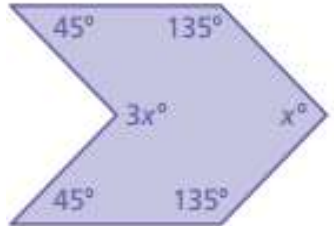
White Board



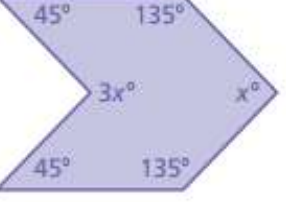
$S = (6-2)180$
 $S = 720$

$x + x + x + x + 90 + 90 = 720$
 $4x + 180 = 720$
 $4x = 540$
 $x = 135$

White Board



White Board



$S = (6-2)180$
 $S = 720$

$x + 135 + 45 + 3x + 45 + 135 = 720$
 $4x + 360 = 720$
 $4x = 360$
 $x = 90$

$3x = 3(90)$
 $= 270 \text{ degrees}$

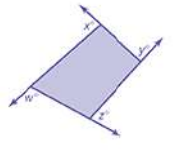
$x = (90)$
 $= 90 \text{ degrees}$

Key Idea

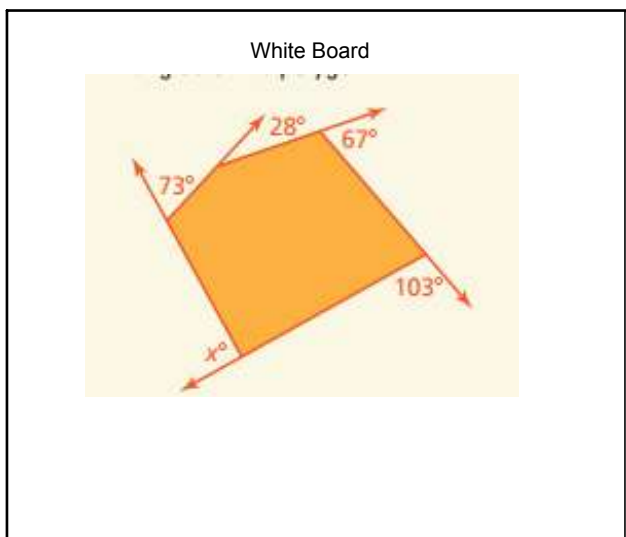
Exterior Angle Measures of a Polygon

Words: The sum of the measures of the exterior angles of a convex polygon is 360° .

Algebra: $w + x + y + z = 360$



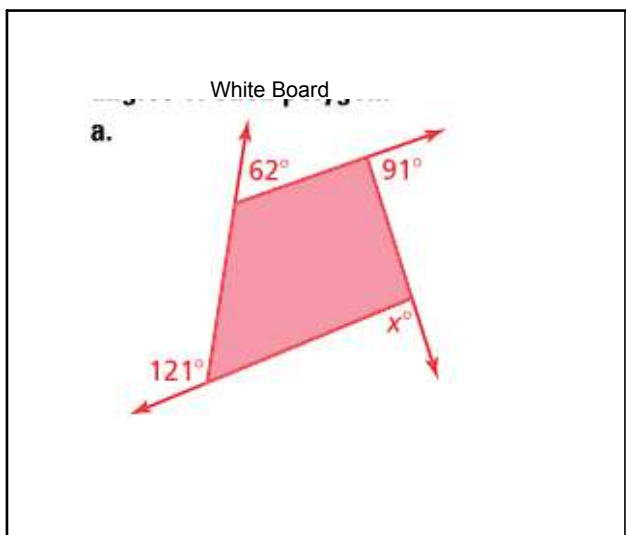
<https://www.mathsisfun.com/geometry/exterior-angles-polygons.html>



White Board

$$x + 73 + 28 + 67 + 103 = 360$$

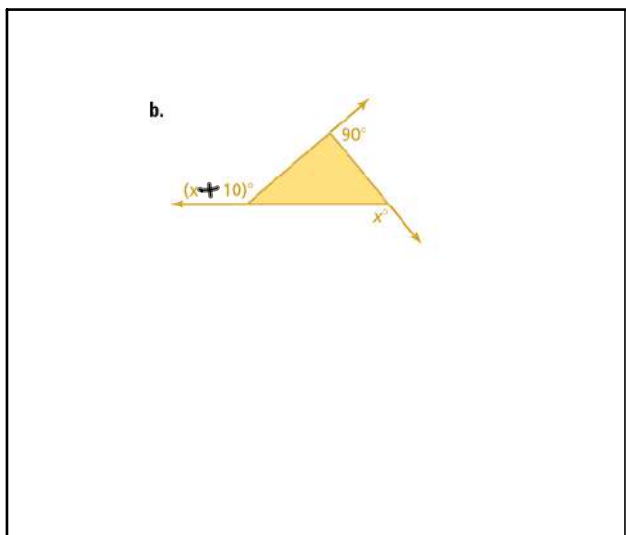
$$x + 271 = 360$$

$$x = 89$$


White Board

$$x + 121 + 62 + 91 = 360$$

$$x + 274 = 360$$

$$x = 86$$


$$(x + 10) + x + 90 = 360$$

$$2x + 100 = 360$$

$$2x = 260$$

$$x = 130$$