3 Chapter Review

Check It Out
Vocabulary Help
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Review Key Vocabulary

transversal, *p. 104*
interior angles, *p. 105*
exterior angles, *p. 105*
interior angles of a polygon, *p. 112*
exterior angles of a polygon, *p. 112*
convex polygon, *p. 119*
concave polygon, *p. 119*
regular polygon, *p. 121*
indirect measurement, *p. 129*

Review Examples and Exercises

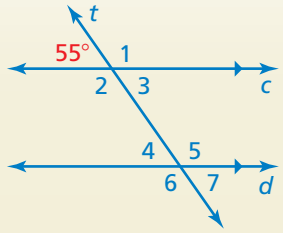
3.1 Parallel Lines and Transversals *(pp. 102–109)*

Use the figure to find the measure of $\angle 6$.

$\angle 2$ and the 55° angle are supplementary.
So, the measure of $\angle 2$ is $180° - 55° = 125°$.

$\angle 2$ and $\angle 6$ are corresponding angles.
They are congruent.

∴ So, the measure of $\angle 6$ is 125°.

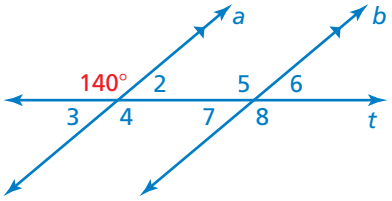


Exercises

Use the figure to find the measure of the angle. Explain your reasoning.

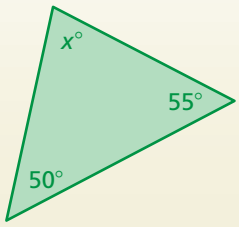
1. $\angle 8$ **2.** $\angle 5$

3. $\angle 7$ **4.** $\angle 2$



3.2 Angles of Triangles *(pp. 110–115)*

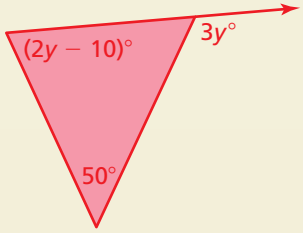
a. Find the value of x.



$x + 50 + 55 = 180$
$x + 105 = 180$
$x = 75$

∴ The value of x is 75.

b. Find the measure of the exterior angle.



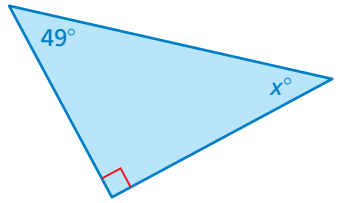
$3y = (2y - 10) + 50$
$3y = 2y + 40$
$y = 40$

∴ So, the measure of the exterior angle is $3(40)° = 120°$.

Exercises

Find the measures of the interior angles.

5.



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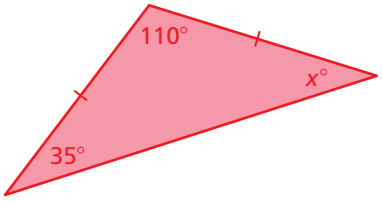
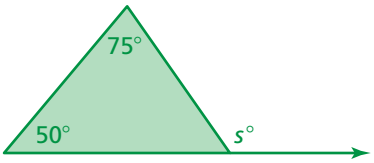


Find the measure of the exterior angle.

7.



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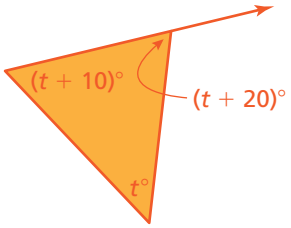


3.3 Angles of Polygons *(pp. 118–125)*

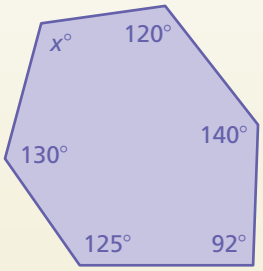
a. Find the value of x.

Step 1: The polygon has 6 sides. Find the sum of the interior angle measures.

$S = (n - 2) \cdot 180°$ Write the formula.

$= (6 - 2) \cdot 180°$ Substitute 6 for n.

$= 720$ Simplify. The sum of the interior angle measures is 720°.



Step 2: Write and solve an equation.

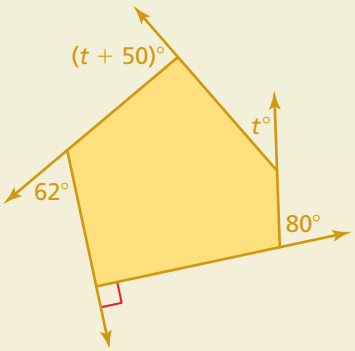
$$130 + 125 + 92 + 140 + 120 + x = 720$$

$$607 + x = 720$$

$$x = 113$$

∴ The value of x is 113.

b. Find the measures of the exterior angles of the polygon.



Write and solve an equation for t.

$$t + 80 + 90 + 62 + (t + 50) = 360$$

$$2t + 282 = 360$$

$$2t = 78$$

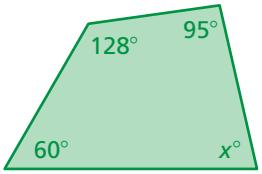
$$t = 39$$

∴ So, the measures of the exterior angles are 39°, 80°, 90°, 62°, and $(39 + 50)° = 89°$.

Exercises

Find the measures of the interior angles of the polygon.

9.



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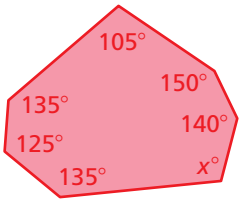

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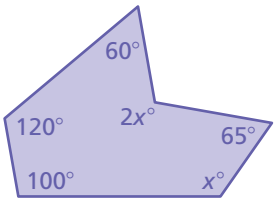
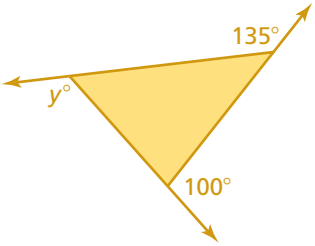


Find the measures of the exterior angles of the polygon.

12.



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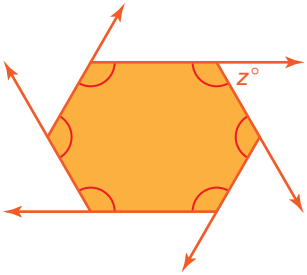
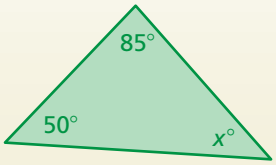
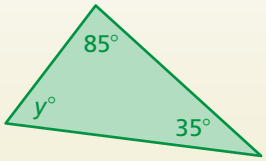


3.4 Using Similar Triangles *(pp. 126–131)*

Tell whether the triangles are similar. Explain.





Write and solve an equation to find x.

$$50 + 85 + x = 180$$

$$135 + x = 180$$

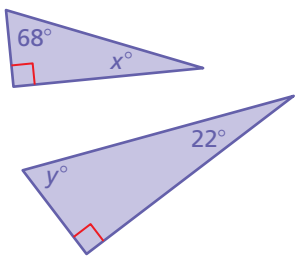
$$x = 45$$

∴ The triangles do not have two pairs of congruent angles. So, the triangles are not similar.

Exercises

Tell whether the triangles are similar. Explain.

14.



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