5 Chapter Review

Review Key Vocabulary

complementary angles, *p. 186*
supplementary angles, *p. 186*
congruent angles, *p. 187*
vertical angles, *p. 187*
isosceles triangle, *p. 192*

congruent sides, *p. 192*
equilateral triangle, *p. 192*
equiangular triangle, *p. 192*
polygon, *p. 198*
regular polygon, *p. 199*
convex polygon, *p. 200*
concave polygon, *p. 200*

similar triangles, *p. 208*
indirect measurement, *p. 209*
perpendicular lines, *p. 214*
transversal, *p. 214*
interior angles, *p. 215*
exterior angles, *p. 215*

Review Examples and Exercises

5.1 Classifying Angles *(pp. 184–189)*

Find the value of x.
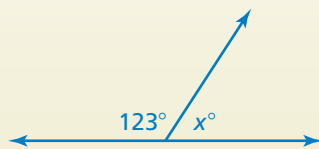
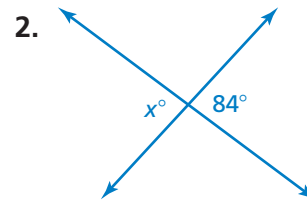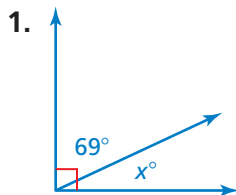The angles are supplementary angles.
So, the sum of their measures is 180°.
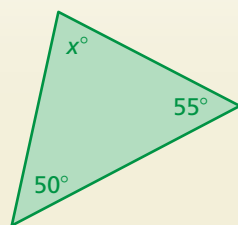
$$x + 123 = 180$$
$$x = 57$$

⋮ So, x is 57.

Exercises

Find the value of x.

1.

2.

5.2 Angles and Sides of Triangles *(pp. 190–195)*

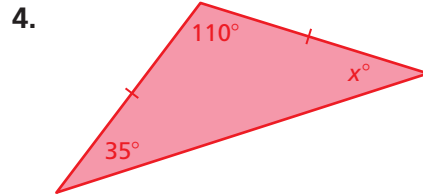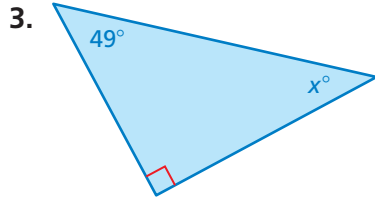**Find the value of x. Then classify the triangle.**

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

⋮ The value of x is 75. The triangle has three
acute angle measures, 50°, 55°, and 75°.
So, it is an acute triangle.

Exercises

Find the value of x. Then classify the triangle in as many ways as possible.

3.

49°

$x°$

4.

110°

$x°$

35°

Find the value of x.

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

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

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

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

$x°$ 120°

130° 140°
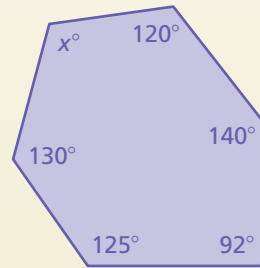
125° 92°

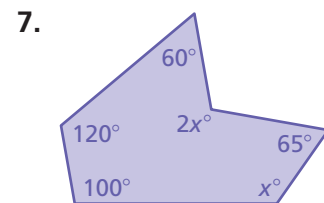**Step 2:** Write and solve an equation.

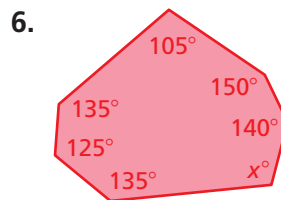$130 + 125 + 92 + 140 + 120 + x = 720$

$607 + x = 720$

$x = 113$

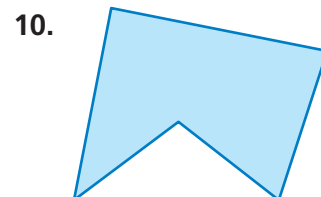∴ The value of x is 113.

Exercises

Find the value of x.

5.

128° 95°

60° $x°$

6.

105°

150°

135°

140°

125°

135° $x°$

7.

60°

120° $2x°$

65°

100° $x°$
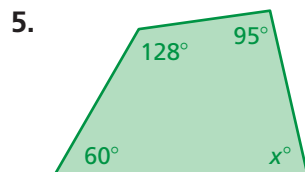
Tell whether the polygon is *convex* or *concave*. Explain.

8.

9.

10.

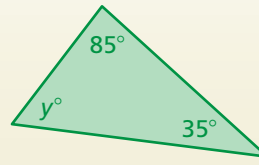**5.4** **Using Similar Triangles** *(pp. 206–211)*

Tell whether the triangles are similar. Explain.
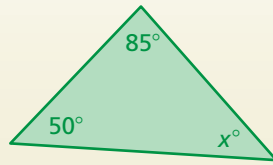
$$50 + 85 + x = 180$$
$$135 + x = 180$$
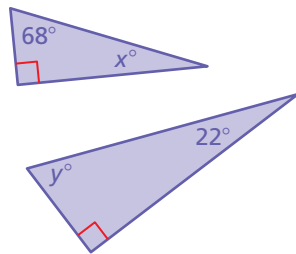$$x = 45$$

$$y + 85 + 35° = 180$$
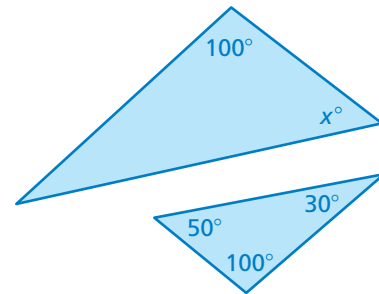$$y + 120 = 180$$
$$y = 60$$

The triangles do not have the same angle measures. So, they are not similar.

Exercises

11. Tell whether the triangles are similar. Explain.
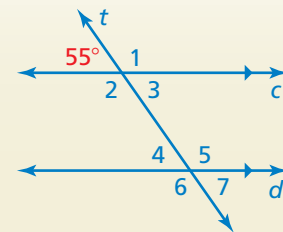
12. The triangles are similar Find the value of *x*.

5.5 **Parallel Lines and Transversals** *(pp. 212–219)*

Use the figure to find the measure of ∠6.

∠2 and the 55° angle are supplementary. So, the measure of ∠2 is 180° − 55° = 125°.

∠2 and ∠6 are corresponding angles. They are congruent.

So, the measure of ∠6 is 125°.

Exercises

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

13. ∠8

14. ∠5

15. ∠7

16. ∠2