

5 Angles and Similarity

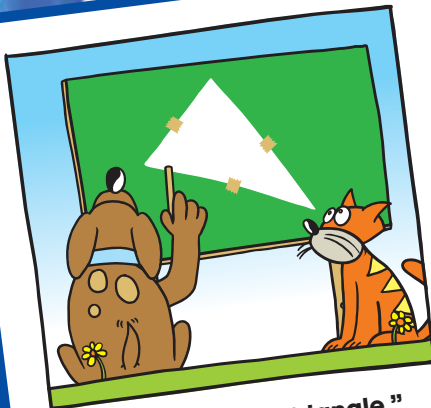
5.1 Classifying Angles

5.2 Angles and Sides of Triangles

5.3 Angles of Polygons

5.4 Using Similar Triangles

5.5 Parallel Lines and Transversals



"Start with any triangle."



"Tear off the angles. You can always rearrange the angles so that they form a straight line."



"What does that prove?"



"Let's use shadows and similar triangles to indirectly measure the height of the giant hyena standing right behind you."

"Maybe if I sit perfectly still he won't see me."

What You Learned Before

Finding Unknown Measures in Similar Triangles

Example 1 The two triangles are similar. Find the value of x .

$$\frac{16}{18} = \frac{12}{x}$$

$$16x = 216$$

$$x = 13.5$$

Write a proportion.

Use Cross Products Property.

Divide each side by 16.



So, x is 13.5 yards.

Example 2 The two quadrilaterals are similar. The ratio of their perimeters is $4 : 5$. Find the value of x .

$$\frac{4}{5} = \frac{x}{25}$$

$$100 = 5x$$

$$20 = x$$

Write a proportion.

Use Cross Products Property.

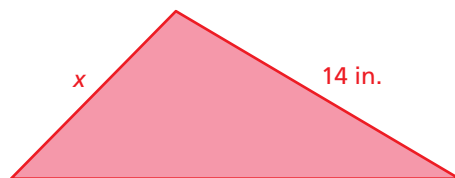
Divide each side by 5.



So, x is 20 centimeters.

Try It Yourself

The polygons are similar. Find the value of x .



2. The ratio of the perimeters is $2 : 1$.

