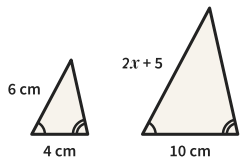


Similar triangles and equations

ANSWERS

1

The triangles are similar. Find x .



$$\text{scale factor} = 10 \div 4 = 2.5$$

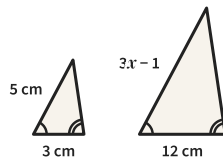
$$2x + 5 = 6 \times 2.5$$

$$x = 5$$

Answer $x = 5$

2

The triangles are similar. Find x .



$$\text{scale factor} = 12 \div 3 = 4$$

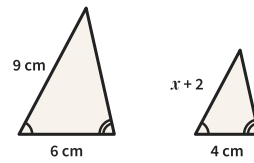
$$3x - 1 = 5 \times 4$$

$$x = 7$$

Answer $x = 7$

3

The triangles are similar. Find x .



$$\text{scale factor} = 4 \div 6 = \frac{2}{3}$$

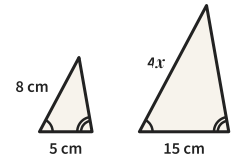
$$x + 2 = 9 \times \frac{2}{3}$$

$$x = 4$$

Answer $x = 4$

4

The triangles are similar. Find x .

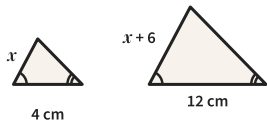


$$x = 6$$

Answer $x = 6$

5

The triangles are similar. Find x .



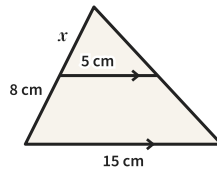
the scale factor is 3, so $x + 6 = 3x$

$$x = 3$$

Answer $x = 3$

6

The two lines with arrows are parallel. The small triangle at the top has sides x and 5 cm. Find x .



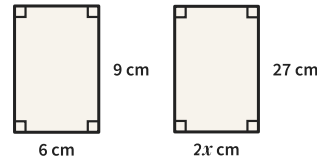
the scale factor is $15 \div 5 = 3$, so $x + 8 = 3x$

$$x = 4$$

Answer $x = 4$

7

A photo 6 cm by 9 cm is enlarged to $2x$ cm by 27 cm. Find x .



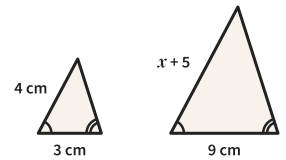
the scale factor is 3, so $2x = 18$

$$x = 9$$

Answer $x = 9$

8

The triangles are similar. Find x , then the perimeter of the large triangle.



the scale factor is 3: $x + 5 = 12$; the third side is $5 \times 3 = 15$

$$36 \text{ cm}$$

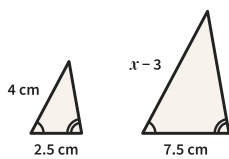
Answer 36 cm

Similar triangles and equations further practice

ANSWERS

9

The triangles are similar. Find x .



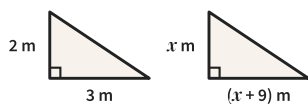
$$x - 3 = 4 \times 3$$

$$x = 15$$

Answer $x = 15$

10

A post 2 m tall casts a shadow 3 m long. At the same time a tree x m tall casts a shadow $(x + 9)$ m long. How tall is the tree?



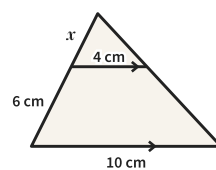
$$x \div (x + 9) = 2 \div 3$$

$$18 \text{ m}$$

Answer 18 m

11

The two lines with arrows are parallel. Find x .



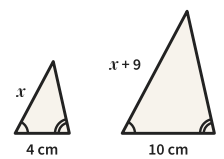
$$x \div (x + 6) = 4 \div 10$$

$$x = 4$$

Answer $x = 4$

12

The triangles are similar. Find x .



$$\text{scale factor } 2.5: x + 9 = 2.5x$$

$$x = 6$$

Answer $x = 6$

13

A triangle has sides 3 cm, 5 cm and x cm. A similar triangle has sides 9 cm, 15 cm and 21 cm. Find x .

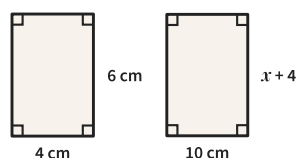
every side is multiplied by 3

$$x = 7$$

Answer $x = 7$

14

The rectangles are similar. Find the area of the large rectangle.



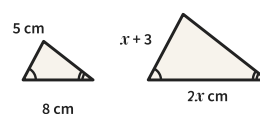
$$x + 4 = 15, \text{ so } 10 \times 15$$

$$150 \text{ cm}^2$$

Answer 150 cm^2

15

The triangles are similar. Find x .



$$2x \div 8 = (x + 3) \div 5$$

$$x = 12$$

Answer $x = 12$

16

Ravi says triangles with sides 4 cm, 6 cm and 6 cm, 8 cm are similar because 2 was added to each side. Explain why he is wrong.

$$6 \div 4 = 1.5 \text{ but } 8 \div 6 = 1.33...$$

Similar means multiplied

Answer Similar means multiplied