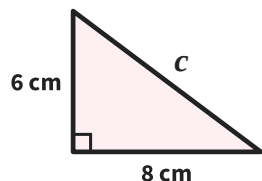


Pythagoras: Finding the Hypotenuse

1

Find the length of the hypotenuse, c .



$$c^2 = 6^2 + 8^2$$

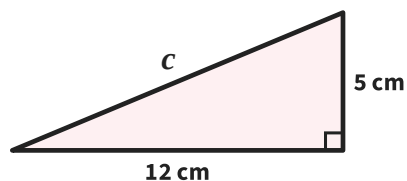
$$c^2 = 36 + 64$$

$$c^2 = 100$$

$$c = \sqrt{100} = 10 \text{ cm}$$

2

Find the length of the hypotenuse, c .



$$c^2 = 5^2 + 12^2$$

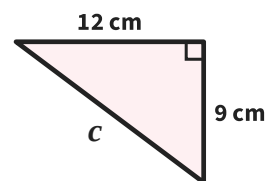
$$c^2 = 25 + 144$$

$$c^2 = 169$$

$$c = \sqrt{169} = 13 \text{ cm}$$

3

Find the length of the hypotenuse, c .



$$c^2 = 9^2 + 12^2$$

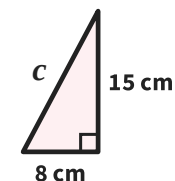
$$c^2 = 81 + 144$$

$$c^2 = 225$$

$$c = \sqrt{225} = 15 \text{ cm}$$

4

Find the length of the hypotenuse, c .



$$c^2 = 8^2 + 15^2$$

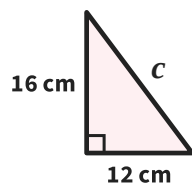
$$c^2 = 64 + 225$$

$$c^2 = 289$$

$$c = \sqrt{289} = 17 \text{ cm}$$

5

Find the length of the hypotenuse, c .



$$c^2 = 12^2 + 16^2$$

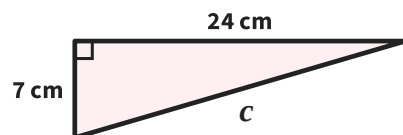
$$c^2 = 144 + 256$$

$$c^2 = 400$$

$$c = \sqrt{400} = 20 \text{ cm}$$

6

Find the length of the hypotenuse, c .



$$c^2 = 7^2 + 24^2$$

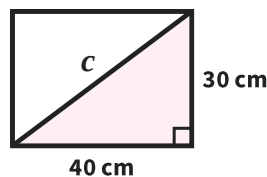
$$c^2 = 49 + 576$$

$$c^2 = 625$$

$$c = \sqrt{625} = 25 \text{ cm}$$

7

A picture frame is a rectangle.
Find the length of its diagonal, c .



$$c^2 = 30^2 + 40^2$$

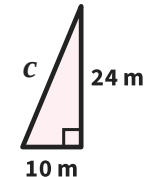
$$c^2 = 900 + 1600$$

$$c^2 = 2500$$

$$c = \sqrt{2500} = 50 \text{ cm}$$

8

A kite is 24 m up and 10 m along
from Mia. How long is its string, c ?



$$c^2 = 24^2 + 10^2$$

$$c^2 = 576 + 100$$

$$c^2 = 676$$

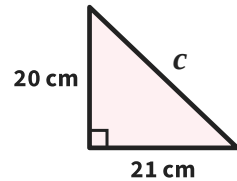
$$c = \sqrt{676} = 26 \text{ m}$$

Pythagoras: Finding the Hypotenuse *further practice*

ANSWERS 

9

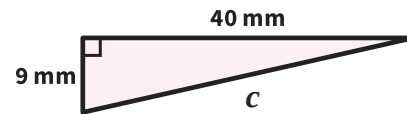
Find the length of the hypotenuse, c .



$$\begin{aligned} c^2 &= 20^2 + 21^2 \\ c^2 &= 400 + 441 \\ c^2 &= 841 \\ c &= \sqrt{841} = 29 \text{ cm} \end{aligned}$$

10

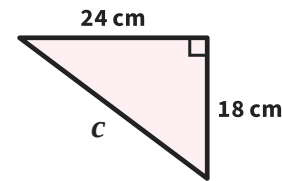
Find the length of the hypotenuse, c .



$$\begin{aligned} c^2 &= 9^2 + 40^2 \\ c^2 &= 81 + 1600 \\ c^2 &= 1681 \\ c &= \sqrt{1681} = 41 \text{ mm} \end{aligned}$$

11

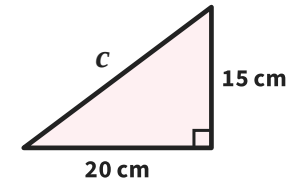
Find the length of the hypotenuse, c .



$$\begin{aligned} c^2 &= 18^2 + 24^2 \\ c^2 &= 324 + 576 \\ c^2 &= 900 \\ c &= \sqrt{900} = 30 \text{ cm} \end{aligned}$$

12

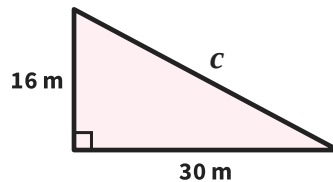
A shelf bracket is a triangle with a right angle. Find the length of its sloping edge, c .



$$\begin{aligned} c^2 &= 15^2 + 20^2 \\ c^2 &= 225 + 400 \\ c^2 &= 625 \\ c &= \sqrt{625} = 25 \text{ cm} \end{aligned}$$

13

Find the length of the hypotenuse, c .

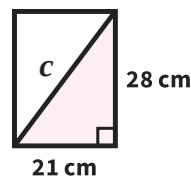


$$\begin{aligned} c^2 &= 16^2 + 30^2 = 256 + 900 = 1156 \\ c &= \sqrt{1156} = 34 \end{aligned}$$

$$c = 34 \text{ m}$$

14

A tablet screen is 21 cm wide and 28 cm tall. Is it more than 34 cm from corner to corner?

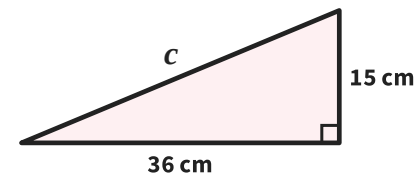


$$\begin{aligned} c^2 &= 21^2 + 28^2 = 441 + 784 = 1225 \\ c &= \sqrt{1225} = 35 \end{aligned}$$

Answer Yes, 35 cm

15

Find the perimeter of this triangle.



$$c^2 = 15^2 + 36^2 = 225 + 1296 = 1521$$

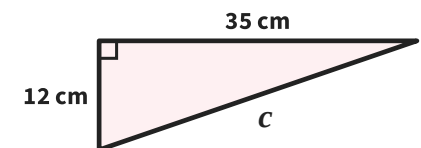
$$c = \sqrt{1521} = 39$$

$$15 + 36 + 39 = 90$$

Perimeter 90 cm

16

Sam says $c = 12 + 35 = 47$ cm. What has Sam done wrong?



Sam should square the sides first

Right answer 37 cm