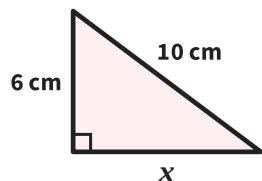


Pythagoras: Finding a Shorter Side

1

Find the length of the side marked x .



$$x^2 = 10^2 - 6^2$$

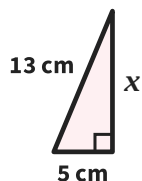
$$x^2 = 100 - 36$$

$$x^2 = 64$$

$$x = \sqrt{64} = 8 \text{ cm}$$

2

Find the length of the side marked x .



$$x^2 = 13^2 - 5^2$$

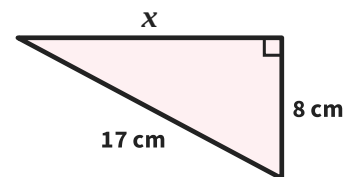
$$x^2 = 169 - 25$$

$$x^2 = 144$$

$$x = \sqrt{144} = 12 \text{ cm}$$

3

Find the length of the side marked x .



$$x^2 = 17^2 - 8^2$$

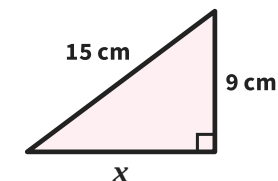
$$x^2 = 289 - 64$$

$$x^2 = 225$$

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

4

Find the length of the side marked x .



$$x^2 = 15^2 - 9^2$$

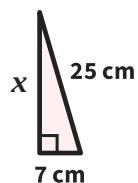
$$x^2 = 225 - 81$$

$$x^2 = 144$$

$$x = \sqrt{144} = 12 \text{ cm}$$

5

Find the length of the side marked x .



$$x^2 = 25^2 - 7^2$$

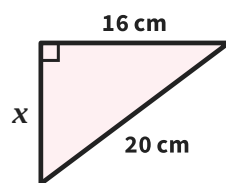
$$x^2 = 625 - 49$$

$$x^2 = 576$$

$$x = \sqrt{576} = 24 \text{ cm}$$

6

Find the length of the side marked x .



$$x^2 = 20^2 - 16^2$$

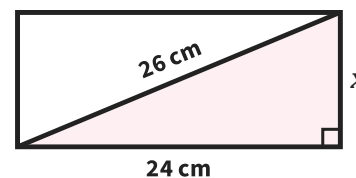
$$x^2 = 400 - 256$$

$$x^2 = 144$$

$$x = \sqrt{144} = 12 \text{ cm}$$

7

A sign is a rectangle 24 cm wide. Its diagonal is 26 cm. Find its height, x .



$$x^2 = 26^2 - 24^2$$

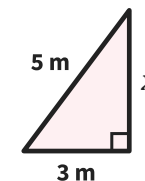
$$x^2 = 676 - 576$$

$$x^2 = 100$$

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

8

A tent's guy rope is 5 m long. It is pegged 3 m from the pole. How high up the pole does it reach?



$$x^2 = 5^2 - 3^2$$

$$x^2 = 25 - 9$$

$$x^2 = 16$$

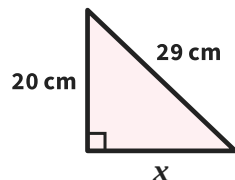
$$x = \sqrt{16} = 4 \text{ m}$$

Pythagoras: Finding a Shorter Side *further practice*

ANSWERS 

9

Find the length of the side marked x .



$$x^2 = 29^2 - 20^2$$

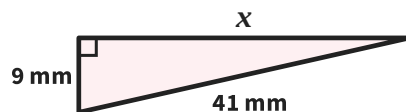
$$x^2 = 841 - 400$$

$$x^2 = 441$$

$$x = \sqrt{441} = 21 \text{ cm}$$

10

Find the length of the side marked x .



$$x^2 = 41^2 - 9^2$$

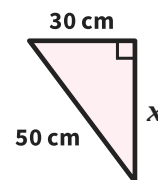
$$x^2 = 1681 - 81$$

$$x^2 = 1600$$

$$x = \sqrt{1600} = 40 \text{ mm}$$

11

Find the length of the side marked x .



$$x^2 = 50^2 - 30^2$$

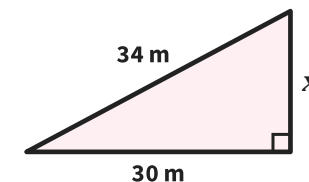
$$x^2 = 2500 - 900$$

$$x^2 = 1600$$

$$x = \sqrt{1600} = 40 \text{ cm}$$

12

A zip wire is 34 m long. It ends 30 m along the ground. How high is the top, x ?



$$x^2 = 34^2 - 30^2$$

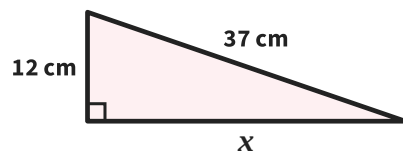
$$x^2 = 1156 - 900$$

$$x^2 = 256$$

$$x = \sqrt{256} = 16 \text{ m}$$

13

Find the length of the side marked x .



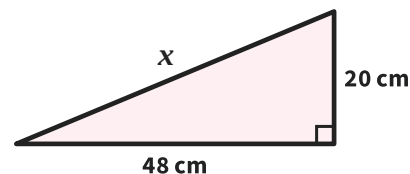
$$x^2 = 37^2 - 12^2 = 1369 - 144 = 1225$$

$$x = \sqrt{1225} = 35$$

$$x = 35 \text{ cm}$$

14

Find the length of the side marked x . Add or subtract?



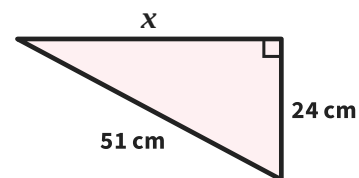
$$x^2 = 20^2 + 48^2 = 400 + 2304 = 2704$$

$$x = \sqrt{2704} = 52$$

$$x = 52 \text{ cm}$$

15

Find the perimeter of this triangle.



$$x^2 = 51^2 - 24^2 = 2601 - 576 = 2025$$

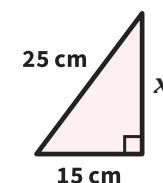
$$x = \sqrt{2025} = 45$$

$$51 + 24 + 45 = 120$$

$$\text{Perimeter } 120 \text{ cm}$$

16

Sam writes $x^2 = 25^2 + 15^2$. What has Sam done wrong?



Sam should subtract the squares

$$\text{Right answer } 20 \text{ cm}$$