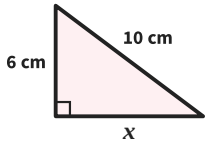


Pythagoras: Finding a Shorter Side

ANSWERS 

1

Find the length of the side marked x.



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

$$x^2 = 100 - 36$$

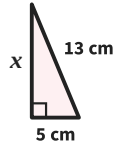
$$x^2 = 64$$

$$x = \sqrt{64}$$

x = 8 cm

2

Find the length of the side marked x.



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

$$x^2 = 169 - 25$$

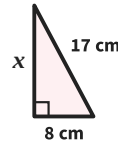
$$x^2 = 144$$

$$x = \sqrt{144}$$

x = 12 cm

3

Find the length of the side marked x.



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

$$x^2 = 289 - 64$$

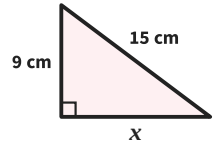
$$x^2 = 225$$

$$x = \sqrt{225}$$

x = 15 cm

4

Find the length of the side marked x.



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

$$x^2 = 225 - 81$$

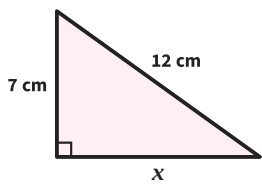
$$x^2 = 144$$

$$x = \sqrt{144}$$

x = 12 cm

5

Find x to 1 decimal place.



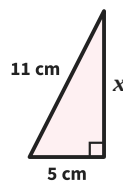
$$x^2 = 12^2 - 7^2$$

$$x^2 = 95, x = \sqrt{95}$$

x = 9.7 cm

6

Find x to 1 decimal place.



$$x^2 = 11^2 - 5^2$$

$$x^2 = 96, x = \sqrt{96}$$

x = 9.8 cm

7

A phone screen has a diagonal of 15 cm. The screen is 7 cm wide. How tall is it? Give your answer to 1 decimal place.

$$\sqrt{(15^2 - 7^2)} = \sqrt{176}$$

Answer 13.3 cm

8

A rectangle has a diagonal of 13 cm and a width of 5 cm. Find its length.

$$\sqrt{(13^2 - 5^2)} = \sqrt{144}$$

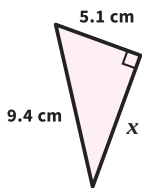
Answer 12 cm

Pythagoras: Finding a Shorter Side further practice

ANSWERS 

9

Find x to 1 decimal place.



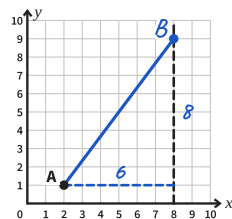
$$x^2 = 9.4^2 - 5.1^2 = 62.35$$

$$x = \sqrt{62.35}$$

x = 7.9 cm

10

A is the point (2, 1). B is on the dashed line, above A. AB is 10 units long. Find the coordinates of B.

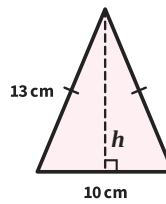


$$\text{across } 6, \text{ so up } \sqrt{(10^2 - 6^2)} = 8$$

B = (8, 9)

11

The triangle is isosceles. Find its height, h.



$$\text{half the base is } 5 \text{ cm}$$

$$h = \sqrt{(13^2 - 5^2)} = \sqrt{144}$$

h = 12 cm

12

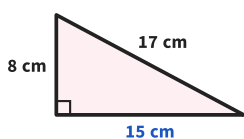
A zip wire is 50 m long. It runs in a straight line from the top of a tower to a point on level ground 48 m from the foot of the tower. How tall is the tower?

$$\sqrt{(50^2 - 48^2)} = \sqrt{196}$$

Answer 14 m

13

Find the area of the triangle.



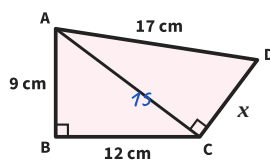
$$\text{base} = \sqrt{(17^2 - 8^2)} = 15$$

$$15 \times 8 \div 2$$

Area 60 cm²

14

Find the length x.



$$AC = \sqrt{(9^2 + 12^2)} = 15$$

$$x = \sqrt{(17^2 - 15^2)} = 8$$

x = 8 cm

15

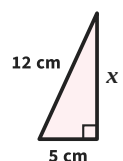
A wheelchair ramp is 6.1 m long. It covers a distance of 6 m along level ground. How high does it rise? Give your answer to 1 decimal place.

$$\sqrt{(6.1^2 - 6^2)} = \sqrt{1.21}$$

Answer 1.1 m

16

Leo writes $x^2 = 12^2 + 5^2 = 169$, so $x = 13$. Explain Leo's mistake, then find x to 1 decimal place.



$$12 \text{ cm is the hypotenuse, so subtract}$$

$$x = \sqrt{(12^2 - 5^2)} = \sqrt{119}$$

x = 10.9 cm