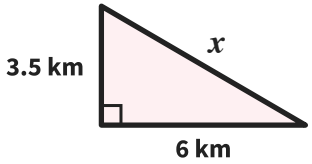
Pythagoras in Context

1

Sam cycles 6 km east, then 3.5 km north. How far is Sam from the start, in a straight line?



$x^2 =$ 6 ^{2} + 3.5 ^{2}

$x^2 =$ 36 + 12.25

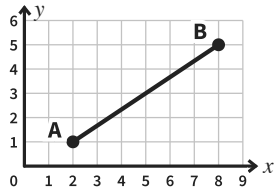
$x^2 =$ 48.25

$x = \sqrt{}$

$x =$ _____

2

A is (2, 1) and B is (8, 5). Find the length of AB.



$AB^2 =$ 6 ^{2} + 4 ^{2}

$AB^2 =$ 36 + 16

$AB^2 =$ ____

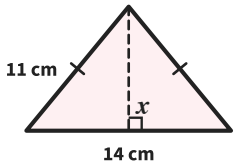
$AB = \sqrt{}$

AB = _____

3

The triangle is isosceles.

Find its height, x.



$x^2 =$ 11 ^{2} − 7 ^{2}

$x^2 =$ ____

$x^2 =$ ____

$x = \sqrt{}$

$x =$ _____

4

A straight path crosses a rectangular garden from one corner to the opposite corner. The path is 13.5 m long and the garden is 9 m wide.
Sketch it, then find the length of the garden.

sketch

$x^2 =$ ____ ^{2} ____ ^{2}

$x^2 =$ ____

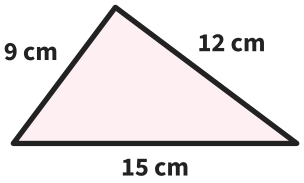
$x^2 =$ ____

$x = \sqrt{}$

$x =$ _____

5

Is this triangle right-angled?
Show how you know.



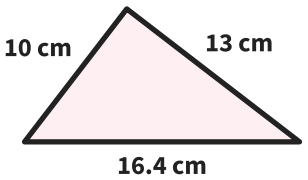
_____

_____

Answer _____

6

Is this triangle right-angled?
Show how you know.



_____

_____

Answer _____

7

Find the distance between the points (−4, 2) and (2, −5).

_____

_____

Answer _____

8

Zoe is checking a triangle with sides 20 cm, 21 cm and 29 cm.
She writes $20^2 + 29^2 = 1241$ and $21^2 = 441$, so it is not right-angled.
Explain Zoe's mistake.
Is the triangle right-angled?

_____

_____

Answer _____

Pythagoras in Context *further practice*

9

A boat sails 12.5 km north, then 7 km west. How far is it from where it started? Give your answer to 2 decimal places.

Answer _____

10

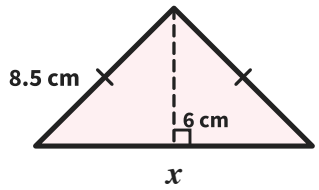
P is (−1, −7) and Q is (5, 2). Find the length of PQ, to 2 decimal places.

PQ = _____

11

The triangle is isosceles.

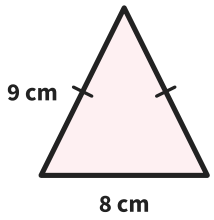
Find the length of its base, x, to 2 decimal places.



x = _____

12

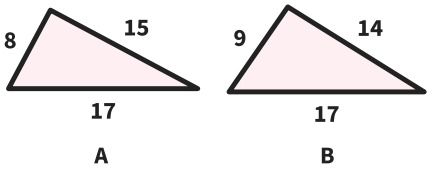
The triangle is isosceles. Find its area, to 2 decimal places.



Area _____

13

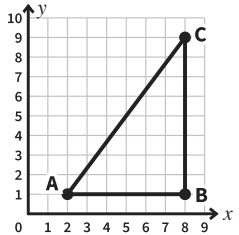
Which of these triangles is right-angled? Show how you know. (Sides in cm.)



Answer _____

14

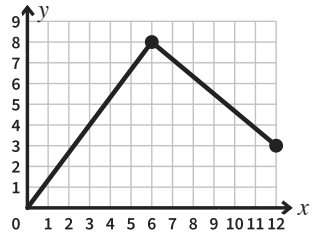
Find the perimeter of triangle ABC.



Perimeter _____

15

A drone flies in a straight line from (0, 0) to (6, 8), then in a straight line to (12, 3). The grid is in km. How far does it fly altogether? Give your answer to 2 decimal places.



Answer _____

16

A triangle has sides of 5 cm, 5 cm and 7 cm. Explain why it is not right-angled. How long would the longest side have to be for it to be right-angled? Give your answer to 2 decimal places.

Answer _____