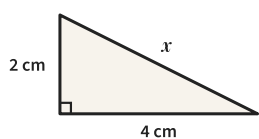


1

Find x . Give your answer as a simplified surd.



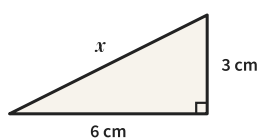
$$x^2 = 16 + 4 = 20$$

$$x = \sqrt{20} = \sqrt{4 \times 5} = 2\sqrt{5}$$

Answer $2\sqrt{5} \text{ cm}$

2

Find x . Give your answer as a simplified surd.



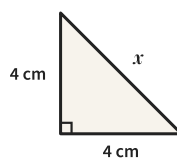
$$x^2 = 36 + 9 = 45$$

$$x = \sqrt{45} = \sqrt{9 \times 5} = 3\sqrt{5}$$

Answer $3\sqrt{5} \text{ cm}$

3

Find x . Give your answer as a simplified surd.



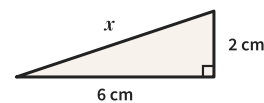
$$x^2 = 16 + 16 = 32$$

$$x = \sqrt{32} = \sqrt{16 \times 2} = 4\sqrt{2}$$

Answer $4\sqrt{2} \text{ cm}$

4

Find x . Give your answer as a simplified surd.

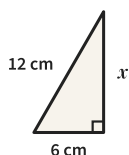


$$x = \sqrt{36 + 4} = \sqrt{40} = 2\sqrt{10}$$

Answer $2\sqrt{10} \text{ cm}$

5

Find x . Give your answer as a simplified surd.

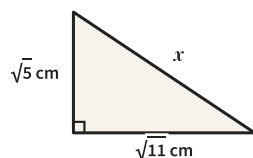


$$12^2 - 6^2 = 108$$

Answer $6\sqrt{3} \text{ cm}$

6

Find the length of the hypotenuse.

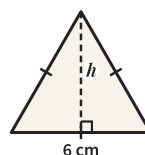


$$(\sqrt{11})^2 + (\sqrt{5})^2 = 16$$

Answer 4 cm

7

This is an equilateral triangle. Find its height h as a simplified surd.

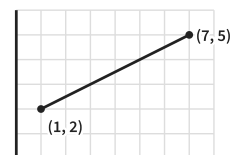


$$\text{half the base is 3, then } 6^2 - 3^2$$

Answer $3\sqrt{3} \text{ cm}$

8

Find the distance between the points (1, 2) and (7, 5). Give your answer as a simplified surd.



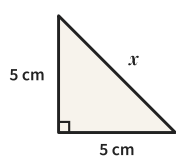
$$\text{across 6, up 3: } 36 + 9 = 45$$

Answer $3\sqrt{5}$

Surds and Pythagoras further practice

9

Find x . Give your answer as a simplified surd.

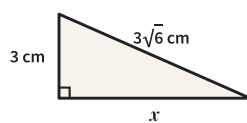


$$25 + 25 = 50$$

Answer $5\sqrt{2} \text{ cm}$

10

Find x . Give your answer as a simplified surd.

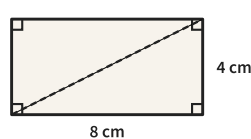


$$(3\sqrt{6})^2 = 54, 54 - 9 = 45$$

Answer $3\sqrt{5} \text{ cm}$

11

A rectangle is 8 cm long and 4 cm wide. Find the length of its diagonal as a simplified surd.

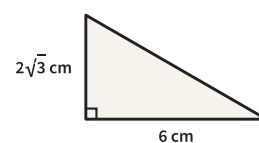


$$64 + 16 = 80$$

Answer $4\sqrt{5} \text{ cm}$

12

Find the perimeter of this triangle. Give your answer in the form $a + b\sqrt{3}$.

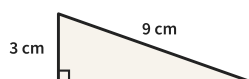


$$\text{hypotenuse } \sqrt{48} = 4\sqrt{3}$$

Answer $6 + 6\sqrt{3} \text{ cm}$

13

Find the exact area of this triangle as a simplified surd.

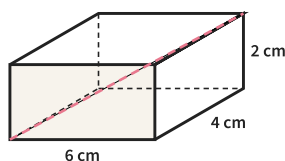


$$\text{the base is } \sqrt{72} = 6\sqrt{2}$$

Answer $9\sqrt{2} \text{ cm}^2$

14

Find the length of the dashed diagonal of this cuboid as a simplified surd.

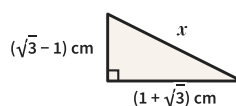


$$4 + 16 + 36 = 56$$

Answer $2\sqrt{14} \text{ cm}$

15

Find the length of the hypotenuse as a simplified surd.

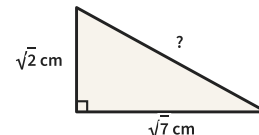


$$(4 + 2\sqrt{3}) + (4 - 2\sqrt{3}) = 8$$

Answer $2\sqrt{2} \text{ cm}$

16

Ali says the hypotenuse is 3 cm. Leon says it is $\sqrt{2} + \sqrt{7}$ cm. Who is right? Explain.



$$2 + 7 = 9, \text{ and } \sqrt{2} + \sqrt{7} \text{ is not } \sqrt{9}$$

Answer Ali, 3 cm