

Shorter Sides of a Right-Angled Triangle

To start:

1. Calculate the answers to the following questions:

- a) 3^2 _____
- b) 12^2 _____
- c) 13^2 _____
- d) 16^2 _____
- e) 2.5^2 _____
- f) 4.2^2 _____
- g) 10.5^2 _____

2. Round the following numbers to 1 decimal place:

- a) 10.546 _____
- b) 20.892 _____
- c) 15.24 _____
- d) 101.721 _____
- e) 9.678 _____
- f) 1.298 _____
- g) 1099.89 _____

3. Calculate the answers to the following questions. Round your answers to 1 decimal place.

- a) $\sqrt{28}$ _____
- b) $\sqrt{68}$ _____
- c) $\sqrt{19}$ _____
- d) $\sqrt{250}$ _____
- e) $\sqrt{5}$ _____
- f) $\sqrt{120}$ _____
- g) $\sqrt{600}$ _____

Remember:

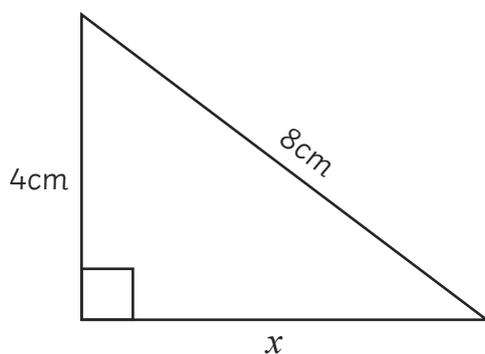
- square;
- square;
- subtract;
- square root.



For main:

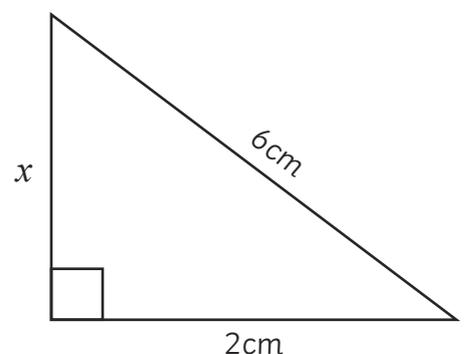
For each triangle, calculate the length of the missing side. Round your answers to 1 decimal place, where necessary. Diagrams **not** drawn to scale.

4.



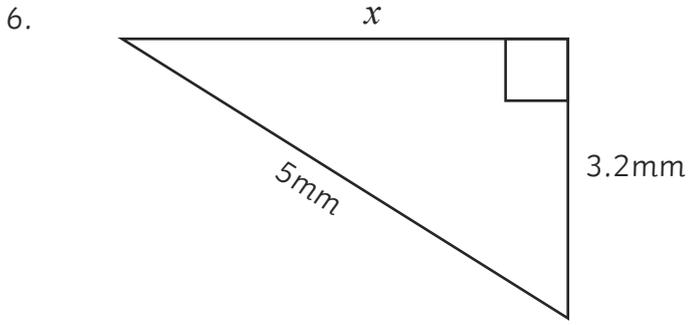
$x =$ _____

5.

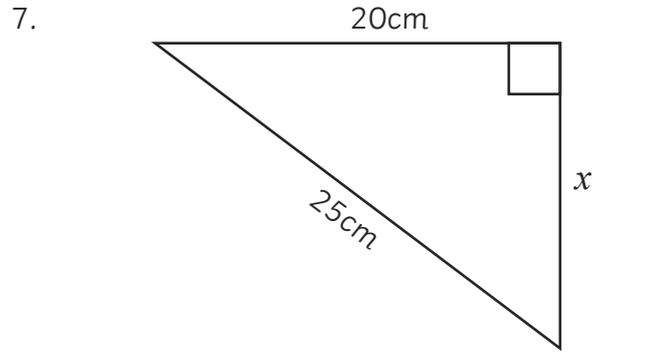


$x =$ _____

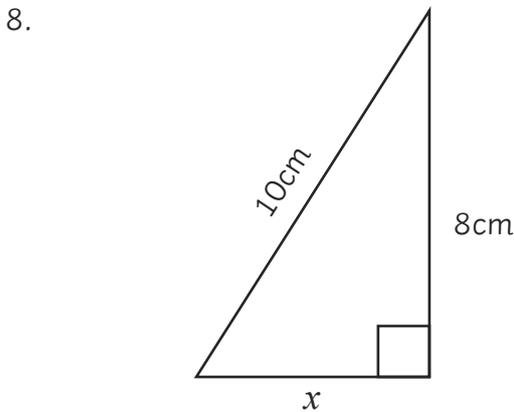
Shorter Sides of a Right-Angled Triangle



$x =$



$x =$



$x =$

To finish:

Koby's house is exactly 595m away from school, in a straight line. To get there he walks 502m south and then he walks west. How far west does he have to walk to get to school? Give your answer to the nearest metre.

Hint: Draw a diagram using the information. Try and draw a triangle.

Answers

To start:

1. Calculate the answers to the following questions:

- a) 3^2 **9**
- b) 12^2 **144**
- c) 13^2 **169**
- d) 16^2 **256**
- e) 2.5^2 **6.25**
- f) 4.2^2 **17.64**
- g) 10.5^2 **110.25**

2. Round the following numbers to 1 decimal place:

- a) 10.546 **10.5**
- b) 20.892 **20.9**
- c) 15.24 **15.2**
- d) 101.721 **101.7**
- e) 9.678 **9.7**
- f) 1.298 **1.3**
- g) 1099.89 **1099.9**

3. Calculate the answers to the following questions. Round your answers to 1 decimal place.

- a) $\sqrt{28}$ **5.3**
- b) $\sqrt{68}$ **8.2**
- c) $\sqrt{19}$ **4.4**
- d) $\sqrt{250}$ **15.8**
- e) $\sqrt{5}$ **2.2**
- f) $\sqrt{120}$ **11.0**
- g) $\sqrt{600}$ **24.5**

Remember:

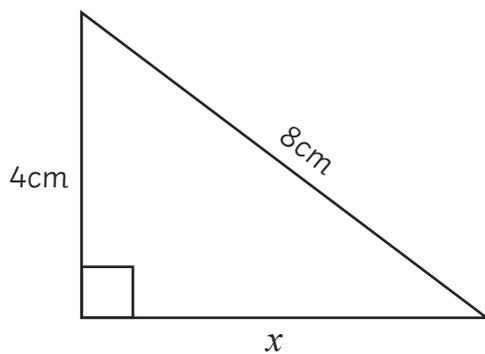
- square;
- square;
- subtract;
- square root.



For main:

For each triangle, calculate the length of the missing side. Round your answers to 1 decimal place, where necessary. Diagrams **not** drawn to scale.

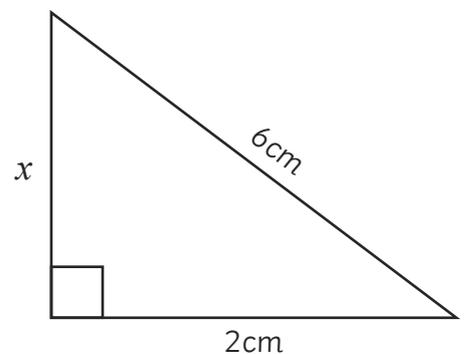
4.



$$\begin{aligned}8^2 - 4^2 \\64 - 16 = 48 \\ \sqrt{48} = 6.92820323\end{aligned}$$

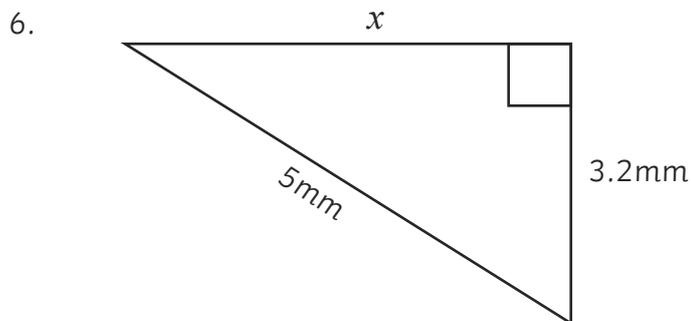
$$x = 6.9\text{cm}$$

5.



$$\begin{aligned}6^2 - 2^2 \\36 - 4 = 32 \\ \sqrt{32} = 5.656854249\end{aligned}$$

$$x = 5.7\text{cm}$$

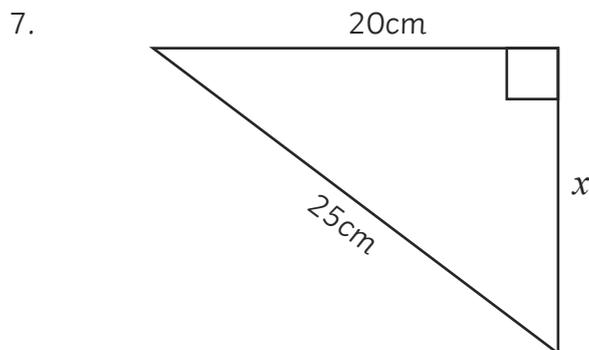


$$5^2 - 3.2^2$$

$$25 - 10.24 = 14.76$$

$$\sqrt{14.76} = 3.841874542$$

$$x = 3.8\text{mm}$$

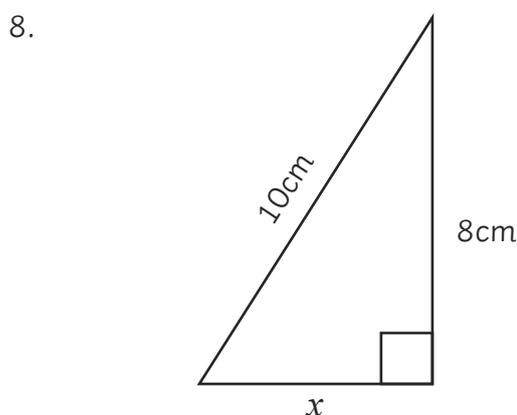


$$25^2 - 20^2$$

$$625 - 400 = 225$$

$$\sqrt{225} = 15$$

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



$$10^2 - 8^2$$

$$100 - 64 = 36$$

$$\sqrt{36} = 6$$

$$x = 6\text{cm}$$

To finish:

Koby's house is exactly 595m away from school, in a straight line. To get there he walks 502m south and then he walks west. How far west does he have to walk to get to school? Give your answer to the nearest metre.

Hint: Draw a diagram using the information. Try and draw a triangle.

$$595^2 - 502^2$$

$$354\,025 - 252\,004 = 102\,021$$

$$\sqrt{102\,021} = 319.4072635$$

He will have to walk 319m west.