

Pythagoras' Theorem – Finding Missing Sides

Example

A right-angled triangle has a hypotenuse of 13 cm and one side of 5 cm. Find the missing side.

$$a^2 = 13^2 - 5^2 = 169 - 25 = 144 \rightarrow a = \sqrt{144} = 12 \text{ cm}$$

BLUE ARE ADDING SO HAVE A GO !!!

Questions (Find the missing side. Give answers to 1 decimal place if necessary.)

Q1. A right triangle has sides 6 cm and 8 cm. Find the hypotenuse.

Q2. A right triangle has a hypotenuse of 10 cm and one side of 6 cm. Find the missing side.

Q3. A triangle has sides 9 cm and 12 cm. Find the hypotenuse.

Q4. A right triangle has a hypotenuse of 15 cm and one side of 9 cm. Find the other side.

Q5. A right triangle has sides 7 cm and 24 cm. Find the hypotenuse.

Q6. A right triangle has a hypotenuse of 17 cm and one side of 15 cm. Find the missing side.

Q7. A triangle has sides 8.4 cm and 11.2 cm. Find the hypotenuse.

Q8. A right triangle has a hypotenuse of 20 cm and one side of 16 cm. Find the missing side.

Q9. A right triangle has sides 9 cm and 40 cm. Find the hypotenuse.

Q10. A right triangle has a hypotenuse of 13 cm and one side of 12 cm. Find the missing side.

Step-by-Step Answers

1. $c = \sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = 10 \text{ cm}$
2. $a = \sqrt{10^2 - 6^2} = \sqrt{100 - 36} = \sqrt{64} = 8 \text{ cm}$
3. $c = \sqrt{9^2 + 12^2} = \sqrt{81 + 144} = \sqrt{225} = 15 \text{ cm}$
4. $a = \sqrt{15^2 - 9^2} = \sqrt{225 - 81} = \sqrt{144} = 12 \text{ cm}$
5. $c = \sqrt{7^2 + 24^2} = \sqrt{49 + 576} = \sqrt{625} = 25 \text{ cm}$
6. $a = \sqrt{17^2 - 15^2} = \sqrt{289 - 225} = \sqrt{64} = 8 \text{ cm}$
7. $c = \sqrt{8.4^2 + 11.2^2} = \sqrt{70.56 + 125.44} = \sqrt{196} = 14 \text{ cm}$
8. $a = \sqrt{20^2 - 16^2} = \sqrt{400 - 256} = \sqrt{144} = 12 \text{ cm}$
9. $c = \sqrt{9^2 + 40^2} = \sqrt{81 + 1600} = \sqrt{1681} = 41 \text{ cm}$
10. $a = \sqrt{13^2 - 12^2} = \sqrt{169 - 144} = \sqrt{25} = 5 \text{ cm}$