Finding the hypotenuse

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. Find the hypotenuse for legs 6 cm and 8 cm. [2 marks]

$c^2 = 36 + 64 = 100$.

Take the positive square root.

Answer: 10 cm.

2. Find the hypotenuse for legs 8 m and 15 m. [2 marks]

$c^2 = 64 + 225 = 289$.

The positive root is 17.

Answer: 17 m.

3. Find the hypotenuse for legs 7 cm and 24 cm. [2 marks]

$c^2 = 49 + 576 = 625$.

The positive root is 25.

Answer: 25 cm.

4. Find the hypotenuse for legs 1.5 m and 2 m. [2 marks]

$c^2 = 2.25 + 4 = 6.25$.

The positive root is 2.5.

Answer: 2.5 m.

5. Find the hypotenuse for legs 60 cm and 0.8 m. [3 marks]

Convert 60 cm to 0.6 m.

$c^2 = 0.36 + 0.64 = 1$.

Answer: 1 m, or 100 cm.

6. A student finds c = 7 cm for legs 8 cm and 15 cm. Explain the size check and correct the answer. [3 marks]

The size check already rejects 7.

Compute $64 + 225 = 289$ and take the root.

Answer: The hypotenuse cannot be shorter than either leg; c = 17 cm.