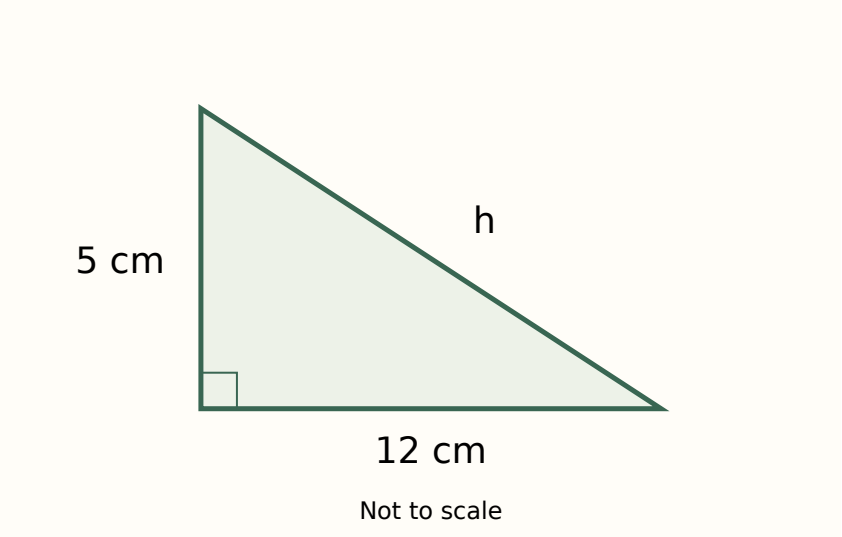
Worked answers | Pythagoras' theorem

Hypotenuse and right-angled triangles

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. In the supplied triangle, identify its two legs and its hypotenuse. [2 marks]



The labelled legs meet at the square marker.

The side across from the marker is h.

Answer: Legs 5 cm and 12 cm; hypotenuse h.

2. A right triangle has legs a and b and hypotenuse c. Write its squared-length relationship. [2 marks]

Square each leg length and add.

The result is the square of the hypotenuse.

Answer: $a^2 + b^2 = c^2$.

3. A right angle is opposite side AB in triangle ABC. Which side is the hypotenuse? [2 marks]

The hypotenuse is opposite the right angle.

The right angle is therefore at C.

Answer: AB.

4. Could a right triangle have hypotenuse 7 cm and a leg of 9 cm? Explain. [2 marks]

The hypotenuse must be the longest side.

A 9 cm leg would be longer than 7 cm.

Answer: No.

5. Can you apply the theorem to a triangle known only to have an angle of 60 degrees? [2 marks]

A 60-degree angle does not establish a right angle.

You need a right angle or enough information to test for one.

Answer: Not from that information alone.

6. The same right triangle is turned upside down. Does its hypotenuse change? Explain. [2 marks]

Rotation keeps side lengths and angles unchanged.

The same side remains opposite the right angle.

Answer: No.