Pythagoras Revision - Find a Side

Key idea

In a right-angled triangle: $a^2 + b^2 = c^2$.

c is the **hypotenuse** — the longest side, opposite the right angle.

Find the long side

Short sides 8 and 15:

$8^2 + 15^2 = 64 + 225 = 289$

$c = \sqrt{289} = 17$

First: spot it

Find the right angle, then name the sides: the two legs are a and b, the long side across from the right angle is c.

Common mistake

The hypotenuse is always the **longest** side. Adding the wrong pair (using c as a short side) gives the wrong answer.

Pythagoras Revision - Reverse Moves

Key idea

For a missing **short** side, **subtract** the squares:
$b^2 = c^2 - a^2$

Find a short side

Long side 25, one short side 7:
$b^2 = 25^2 - 7^2 = 625 - 49 = 576$
$b = \sqrt{576} = 24$

Is it right-angled?

Test $10, 24, 26$:
$10^2 + 24^2 = 100 + 576 = 676$
$26^2 = 676$ — yes, it is right-angled.

Common mistake

Do not assume a triangle is right-angled. Some questions ask you to **prove** it by checking the squares first.