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Pythagoras' Theorem

Student Worksheet

Questions & Working Space

IGCSE Mathematics

Name: _____

Date: _____

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Note

How to use this worksheet. These questions are built *strictly* on the *Pythagoras' Theorem* notes: right-angled triangles and the hypotenuse, the theorem $a^2 + b^2 = c^2$, finding the hypotenuse, finding a shorter side, Pythagorean triples, the converse test for a right angle, applications in 2D shapes, and Pythagoras in 3D.
Working space. Ruled lines are provided after each question — show *all* of your working there. Always identify the hypotenuse first, state whether you are adding or subtracting the squares, and round only at the very last step. Harder questions have a teal **Hint** box; try the question first and use the hint only if you are stuck.
Checking your answers. Full step-by-step solutions, a marking scheme for the exam paper, and a quick answer key are in the separate booklet *"Pythagoras' Theorem — Solutions & Answer Key."* Try each question honestly before you look.

1 Part I — Topic-by-Topic Exercises

1.1 Right-Angled Triangles and the Hypotenuse

Exercise T1 *[Basic]*

In triangle PQR, angle $Q = 90°$. Write down which side is the hypotenuse, and give a reason.

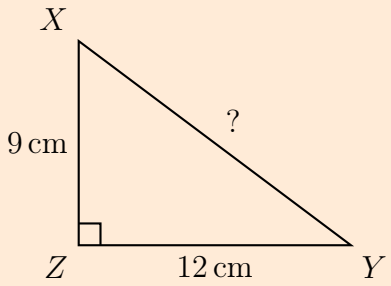
Exercise T2 *[Basic]*

A right-angled triangle has sides of length 8 cm, 15 cm and 17 cm. State which side is the hypotenuse and explain how you know.

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Exercise T3 *[Standard]*

Look at the triangle below.



Name the hypotenuse, name the two legs, and state which side is the longest.

Exercise T4 *[Standard]*

A triangle has angles of 50°, 60° and 70°. Explain why Pythagoras' Theorem cannot be used to find any of its sides.

Exercise T5 *[Intermediate]*

A student says: "The hypotenuse is always the side drawn along the bottom of the diagram." Explain why this is wrong, and state the correct rule for identifying the hypotenuse.

Hint

Think about what happens to a right-angled triangle if you rotate the page. Which property of the hypotenuse stays the same?

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Preview ends here

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