

Pythagoras Theorem

Chapter 15: Pythagoras Theorem · Topic 1

Key Concept

The theorem is written as $a^2 + b^2 = c^2$, where c is the hypotenuse (longest side, opposite the right angle) and a, b are the other two sides.

For example, if $a=3$ and $b=4$, then $c^2 = 3^2 + 4^2 = 9+16 = 25$, so $c = 5$ (a well-known 3-4-5 right triangle).

This theorem only applies to right triangles, helping us find an unknown side when we know the other two.

The Pythagoras Theorem is widely used in construction, navigation, and various real-life situations involving right angles.

Quick Revision Notes

- Pythagoras Theorem: $a^2 + b^2 = c^2$.
- c is the hypotenuse (longest side).
- a and b are the other two sides.
- 3-4-5 is a well-known example: $9+16=25$, $c=5$.
- This applies only to right triangles.
- It finds an unknown side from two known sides.
- It's used in construction and navigation.
- It's a fundamental geometry theorem.

Practice Questions

- 1 Verify the theorem with $a=6$, $b=8$, $c=10$.
- 2 Find c if $a=5$ and $b=12$.
- 3 Find b if $c=13$ and $a=5$.
- 4 Discuss a real-life use of the Pythagoras Theorem.
- 5 Draw a right triangle and label the hypotenuse.
- 6 Solve two Pythagoras Theorem problems.