

Applications of the Pythagoras Theorem

Chapter 9: The Baudhayana–Pythagoras Theorem · Topic 2

Key Concept

For example, if a ladder is placed 6m from a wall and needs to reach a window 8m high, the ladder length (hypotenuse) is calculated as $\sqrt{6^2+8^2} = \sqrt{36+64} = \sqrt{100} = 10\text{m}$. This theorem is also fundamental in navigation (calculating shortest distances), construction (ensuring corners are perfectly square using the 3-4-5 triangle method), and even in digital screen size calculations, where diagonal screen measurements use this exact same principle.

Quick Revision Notes

- The Pythagoras theorem helps find unknown distances in right-angled real-world scenarios.
- Ladder problem example: legs 6m and 8m give a ladder length (hypotenuse) of 10m.
- Construction workers use the 3-4-5 triangle method to check if corners are perfectly square (90°).
- Applications include navigation, construction, and even screen size calculations.

Practice Questions

- 1 A ladder reaches a window 8m high, placed 6m from the wall. Find the ladder's length.
- 2 Explain how the 3-4-5 triangle method helps builders check for right angles.
- 3 Find the diagonal of a rectangular field measuring 12m by 5m.