

Trigonometrical Ratios

Chapter 22: Trigonometrical Ratios · Topic 1

Key Concept

Sine (sin) of an angle equals the opposite side divided by the hypotenuse, cosine (cos) equals the adjacent side divided by the hypotenuse.

Tangent (tan) of an angle equals the opposite side divided by the adjacent side, or equivalently, sin divided by cos.

These ratios help us find unknown sides or angles in right triangles when we know some of the other measurements.

Trigonometric ratios have wide applications in fields like engineering, architecture, navigation, and astronomy for measuring distances and heights.

Quick Revision Notes

- Sine = opposite ÷ hypotenuse.
- Cosine = adjacent ÷ hypotenuse.
- Tangent = opposite ÷ adjacent (or sin ÷ cos).
- These relate angles to side ratios.
- They find unknown sides or angles.
- This requires knowing some other measurements.
- Trigonometry is used in engineering and navigation.
- It helps measure distances and heights.

Practice Questions

- 1 Identify opposite, adjacent and hypotenuse in a right triangle.
- 2 Calculate sin, cos and tan for a given right triangle.
- 3 Discuss a real-life use of trigonometry, like measuring height.
- 4 Solve a problem finding a side using trigonometric ratios.
- 5 Explain the relationship between tan, sin and cos.
- 6 Research how trigonometry helps in navigation.