

Similarity

Chapter 1: Similarity · Topic 1

Key Concept

Two triangles are similar if their corresponding angles are equal (AA similarity) or if their corresponding sides are in proportion (SSS similarity).

The Basic Proportionality Theorem (Thales' theorem) states that a line parallel to one side of a triangle divides the other two sides proportionally.

Similar triangles have equal ratios of corresponding sides, and the ratio of their areas equals the square of the ratio of corresponding sides.

Understanding similarity helps solve problems involving scale models, indirect measurement, and proving geometric relationships.

Quick Revision Notes

- Similar triangles: equal angles, proportional sides.
- AA similarity: equal corresponding angles.
- SSS similarity: proportional corresponding sides.
- Basic Proportionality Theorem (Thales'): parallel line divides sides proportionally.
- Area ratio = square of side ratio.
- Similarity helps scale models.
- Also helps indirect measurement.
- It proves geometric relationships.

Practice Questions

- 1 Check if two triangles with given angles are similar.
- 2 Verify the Basic Proportionality Theorem with a triangle.
- 3 Calculate the area ratio for similar triangles with side ratio 3:4.
- 4 Discuss a real-life use of similarity, like scale models.
- 5 Solve a similarity problem using AA or SSS.
- 6 Explain similar triangles in your own words.