

Geometric Constructions

Chapter 4: Geometric Constructions · Topic 1

Key Concept

To construct a tangent to a circle from an external point, we use the property that the tangent is perpendicular to the radius at the point of contact.

Constructing a triangle similar to a given triangle with a specific scale factor involves proportionally extending or reducing its sides.

Division of a line segment in a given ratio uses the construction technique of drawing auxiliary lines and marking proportional points.

Practising these constructions builds precision and deepens understanding of the geometric relationships being represented.

Quick Revision Notes

- Tangent construction: uses radius perpendicularity.
- From an external point to the circle.
- Similar triangle construction: uses scale factor.
- Proportionally extend/reduce sides.
- Line segment division: given ratio.
- Uses auxiliary lines, proportional points.
- Practice builds construction precision.
- It deepens geometric relationship understanding.

Practice Questions

- 1 Construct a tangent to a circle from an external point.
- 2 Construct a triangle similar to a given triangle with scale factor 1.5.
- 3 Divide a line segment in the ratio 2:3.
- 4 Discuss why precision matters in construction.
- 5 Practice using a compass for accurate constructions.
- 6 Explain one construction method in your own words.