

Constructions (Circles)

Chapter 19: Constructions (Circles) · 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.

An inscribed circle (incircle) of a triangle touches all three sides, with its centre found at the intersection of angle bisectors.

A circumscribed circle (circumcircle) passes through all three vertices of a triangle, with its centre found at the intersection of perpendicular bisectors of the sides.

Practising circle constructions builds precision and understanding of the geometric relationships between circles, triangles, and their special points.

Quick Revision Notes

- Tangent construction uses radius perpendicularity.
- Incircle touches all three triangle sides.
- Incircle centre: intersection of angle bisectors.
- Circumcircle passes through all three vertices.
- Circumcircle centre: intersection of perpendicular bisectors.
- These require precise compass and ruler use.
- Practice builds construction precision.
- This connects circles and triangles geometrically.

Practice Questions

- 1 Construct a tangent to a circle from an external point.
- 2 Construct the incircle of a triangle.
- 3 Construct the circumcircle of a triangle.
- 4 Discuss the difference between incircle and circumcircle.
- 5 Practice finding angle bisectors for incircle construction.
- 6 Explain these constructions in your own words.