

Co-ordinate Geometry

Chapter 7: Co-ordinate Geometry · Topic 1

Key Concept

The Cartesian coordinate system uses two perpendicular axes (x and y) to locate points using ordered pairs (x, y).

The distance formula, derived from the Pythagorean theorem, calculates the distance between two points: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.

The midpoint formula finds the exact middle point between two coordinates: $((x_1 + x_2)/2, (y_1 + y_2)/2)$.

Coordinate geometry allows us to solve geometric problems, like finding distances and midpoints, using algebraic methods.

Quick Revision Notes

- Cartesian system: x, y axes, ordered pairs.
- Distance formula: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.
- Derived from Pythagorean theorem.
- Midpoint formula: $((x_1 + x_2)/2, (y_1 + y_2)/2)$.
- Finds exact middle point between coordinates.
- Coordinate geometry connects algebra, geometry.
- It solves geometric problems algebraically.
- Practice builds formula application skills.

Practice Questions

- 1 Find the distance between (1,2) and (4,6).
- 2 Find the midpoint of (2,3) and (8,7).
- 3 Plot three points on a coordinate plane.
- 4 Calculate the distance for two points of your choice.
- 5 Discuss how the distance formula relates to Pythagoras.
- 6 Explain coordinate geometry in your own words.