

Section and Mid-Point Formula

Chapter 13: Section and Mid-Point Formula · Topic 1

Key Concept

The mid-point formula is $((x_1+x_2)/2, (y_1+y_2)/2)$, averaging the x and y coordinates of two endpoints.

The section formula for a point dividing a segment in ratio m:n is $((mx_2+nx_1)/(m+n), (my_2+ny_1)/(m+n))$.

These formulas are useful for finding specific points along a line segment, like the centroid of a triangle or dividing points for construction.

Understanding these formulas is essential for coordinate geometry problems involving points, segments, and geometric properties.

Quick Revision Notes

- Mid-point formula: $((x_1+x_2)/2, (y_1+y_2)/2)$.
- It averages x and y coordinates.
- Section formula (ratio m:n): $((mx_2+nx_1)/(m+n), (my_2+ny_1)/(m+n))$.
- These find points along a segment.
- Used for triangle centroids.
- Also used for construction dividing points.
- Essential for coordinate geometry problems.
- Practice builds formula application skills.

Practice Questions

- 1 Find the mid-point of (1,3) and (5,7).
- 2 Find the point dividing (2,2) and (8,8) in ratio 1:3.
- 3 Discuss how these formulas relate to a triangle's centroid.
- 4 Solve a mid-point formula problem.
- 5 Solve a section formula problem.
- 6 Explain both formulas in your own words.