

Graphical Method of Solving Equations

Chapter 3: Pair of Linear Equations in Two Variables · Topic 1

Key Concept

Three possible outcomes exist: if the lines intersect at exactly one point, there is a unique solution (consistent, independent equations); if the lines are parallel and never meet, there is no solution (inconsistent equations); and if the lines coincide exactly (are the same line), there are infinitely many solutions (consistent, dependent equations). Recognising these three cases from the equations' coefficients, without even graphing, is a useful analytical skill developed alongside the graphical method.

Quick Revision Notes

- Solving graphically: plot both equations as lines; their intersection point is the solution.
- One intersection point = unique solution (consistent, independent).
- Parallel lines (never meet) = no solution (inconsistent).
- Coinciding lines (same line) = infinitely many solutions (consistent, dependent).

Practice Questions

- 1 Solve graphically: $x+y=5$ and $x-y=1$.
- 2 Determine, without graphing, whether $x+y=4$ and $2x+2y=8$ have a unique solution, no solution, or infinite solutions.
- 3 Explain what it means geometrically when a pair of linear equations has no solution.