

Understanding Linear Equations

Chapter 4: Linear Equations in Two Variables · Topic 1

Key Concept

For example, the equation $2x+3y=6$ is satisfied by infinitely many ordered pairs, including $(0,2)$, $(3,0)$, and $(1.5,1)$ — each can be verified by substitution. This concept of multiple solutions to a single equation is a key difference from equations in one variable, and understanding it prepares students for studying pairs of simultaneous equations, where finding a solution that satisfies TWO equations at once narrows down the infinite possibilities to typically just one unique solution.

Quick Revision Notes

- A linear equation in two variables: $ax+by+c=0$.
- It has infinitely many solutions, each an ordered pair (x,y) .
- Example: $2x+3y=6$ is satisfied by $(0,2)$, $(3,0)$, $(1.5,1)$, and infinitely more pairs.
- This concept leads into studying simultaneous equations, which narrow solutions to a unique pair.

Practice Questions

- 1 Find two solutions of the equation $x+y=5$.
- 2 Verify that $(3,0)$ and $(0,2)$ are both solutions of $2x+3y=6$.
- 3 Explain why a linear equation in two variables has infinitely many solutions.