

Solving Quadratic Equations by Factorisation

Chapter 4: Quadratic Equations · Topic 1

Key Concept

For example, $x^2-5x+6=0$ factorises into $(x-2)(x-3)=0$, giving two solutions: $x=2$ and $x=3$ (found by setting each factor to zero separately). Factorising requires finding two numbers that multiply to give the constant term (c) and add to give the coefficient of x (b) — for x^2-5x+6 , we need two numbers multiplying to 6 and adding to -5, which are -2 and -3, leading directly to the factors (x-2) and (x-3).

Quick Revision Notes

- A quadratic $ax^2+bx+c=0$ can be solved by factorising into two linear factors, each set to zero.
- Example: $x^2-5x+6=0$ factors to $(x-2)(x-3)=0$, giving $x=2$ and $x=3$.
- Find two numbers multiplying to c and adding to b to determine the factors.
- This method works well when the quadratic factorises with integer/simple rational numbers.

Practice Questions

- 1 Solve by factorisation: $x^2-7x+12=0$.
- 2 Solve by factorisation: $x^2+3x-10=0$.
- 3 Explain the logic behind finding two numbers that multiply to c and add to b when factorising a quadratic.