Factoring Trinomials $(x^2 + bx + c)$

Factoring by Grouping: More Examples & Applications

Each example is designed to show a key idea, build confidence, and catch common mistakes.

Example 1: Positive b and c with Larger Numbers

Factor: $x^2 + 11x + 24$

Example 2: Negative b and c

Factor: $x^2 - 4x - 12$

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Example 3: Positive b, Negative c with Larger Numbers

Factor: $x^2 + 4x - 45$

Example 4: Trinomial with Common Factor First

Factor: $2x^2 + 8x + 6$

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Example 5: Prime Trinomial (No Solution)

Problem: Factor $x^2 + 3x + 5$.

"No numbers multiply to 5 and add to 3. This trinomial is prime (can't be factored)."

Example 6: Missing Terms (GCF First)

Problem: Factor $x^2 + 6x$

Example 7: Solving an Equation

Solve: $x^2 - 3x - 10 = 0$