SOLVING QUADRATIC EQUATIONS (Completing the Square A=1)

Step 1: Arrange the equation in the form $Ax^2 + Bx = C$ $x^2 + 10x - 3 = 0$

Step 2: Determine what value for the third term will make the trinomial a perfect square.

$$\left(\frac{B}{2}\right)^2 = C$$

Step 3: Add that value to both sides.

Step 4: Simplify (write the trinomial as a binomial squared).

Step 5: Take the square root of both sides. (remember the $\pm$)

Step 6: Solve for x (often there are 2 solutions)

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2. Solve by completing the square.

$x^2 - 4x = 2x + 35$

SOLVING QUADRATIC EQUATIONS (Completing the Square A≠1)

Step 1: Arrange the equation in the form $Ax^2 + Bx = C$ $3x^2 – 6x + 12 = 0$

Step 2: Divide both sides by "A".

Step 3: Determine what value for the third term
will make the trinomial a perfect square.
Then Add that value to both sides.

Step 5: Simplify (write the trinomial as a binomial squared).

Step 6: Take the square root of both sides.
(remember the ±)

Step 7: Solve for x (often there are 2 solutions)

Solve All Types of Equations

Example 1: Polynomial: $x^3 = x^2$ What could x be?

1. $\sqrt{x-1} = \sqrt{2x-5}$	2. $x^2 + \sqrt{2}x - 2 = 0$
3. $\sqrt[3]{3t+1} = -2$	4. $\sqrt{12-x} = x$
5. $\frac{-2}{x+4} = \frac{-3}{x+1}$	6. $\frac{3x}{x+1} + \frac{6}{2x} = \frac{7}{x}$