Review - Solving Quadratic Equations by Factoring.

If possible (not all quadratic trinomials are factorable) we solve by factoring.

Key Idea: If $\square \cdot \nabla = 0$, then $\square = 0$ and/or $\nabla = 0$ [zero Product Principle or ZPP]

Example: Solve $2x^2 - 7x = -6$ ← This is not in standard $(ax^2 + bx + c = 0)$ form. So we rearrange!

$$2x^2 - 7x + 6 = 0$$

We factor the trinomial on the left. →

$p = 12$, $s = -7$ → $-3, -4$

$$2x^2 - 3x - 4x + 6 = 0$$

group 1 | group 2

$$x(2x-3) - 2(2x-3) = 0$$

$$(2x-3)(x-2) = 0$$

ZPP step → $2x - 3 = 0$ (or) $x - 2 = 0$

(or) same ↑ x can satisfy one of two different conditions but not both.

$$2x = 3 \quad \text{or} \quad x = 2$$

$$x = \frac{3}{2} \quad \text{or} \quad x = 2$$

Another way to write it is to list the two solutions in a numbered way

$$x_1 = \frac{3}{2}, \quad x_2 = 2$$

→ x_1 first possible value of x (that satisfies the equation).