

Section 5.8: Solving Equations by Factoring

A **quadratic equation** is an equation that can be written in the form $ax^2 + bx + c = 0$ with $a \neq 0$.

**It's an equation where the highest exponent is 2.

The form $ax^2 + bx + c = 0$ is called the **standard form** of a quadratic equation.

Zero Factor Property

If $a \cdot b = 0$, then $a = 0$ or $b = 0$ or both.

What does this mean?

If the product of two numbers is 0, then one or both of the numbers is 0.

Example 1: Solve each equation.

Steps for Solving a Quadratic Equation by Factoring

Step 1: Write the quadratic equation in the form $ax^2 + bx + c = 0$.

Step 2: Factor the polynomial completely.

Step 3: Use the Zero Product Rule.

Step 4: Solve each equation.

Step 5: Check each answer.