

1.6: Solving Equations by Factoring

A **quadratic equation** is written in the general form

$$ax^2 + bx + c = 0 \quad *$$

The **Zero-Factor Property** says if u and v are factors where

$$\underline{uv} = 0, \text{ then } u = 0 \text{ or } v = 0$$

If $(x + 3)(x - 7) = 0$, then $(x + 3) = 0$ or $(x - 7) = 0$, then $x = -3$ or 7

Solving quadratic equations

1. Write the quadratic equation in general form
2. Factor the left side of the equation
3. Set each factor with a variable equal to 0
4. Solve each linear equation
5. Check each solution in the original equation

EX: Solve $5x^2 - 15x = 50$

EX: Solve $3x^2 = 48x$

EX: Solve $x^2 - 8x + 17 = 1$

EX: Solve $2x^3 - 10x^2 = 28x$

HW: page 71 2-38 even

