

# Solving Quadratic Equations by Factoring



## Overview of problems



Example Set: A

Use the Zero-Product Property to solve the equation

$$(x + 2)(x - 1) = 0$$

$$(x - 3)(x + 5) = 0$$

$$(2x + 6)(3x - 1) = 0$$

$$(x + 7)(x + 7) = 0$$



Example Set: B

*Solve the equation by factoring*

$$x^2 - 4x - 12 = 0$$

$$y^2 + 10y + 9 = 0$$

$$2t^2 + 12t - 14 = 0$$

$$x^2 + x = 0$$



Example Set: C

*Solve the equation by factoring*

$$4x^2 - 2x = 0$$

$$3x^2 - 13x - 10 = 0$$

$$5y - 8y^2 = 0$$

$$t(t+1) = 3(t+1)$$

# Solving Quadratic Equations by Factoring



## Overview of problems- KEY



Example Set: A

Use the Zero-Product Property to solve the equation

$$(x + 2)(x - 1) = 0$$

$$x_1 = -2 \quad x_2 = 1$$

$$(x - 3)(x + 5) = 0$$

$$x_1 = 3 \quad x_2 = -5$$

$$(2x + 6)(3x - 1) = 0$$

$$x_1 = -3 \quad x_2 = \frac{1}{3}$$

$$(x + 7)(x + 7) = 0$$

$$x_1 = -7 \quad x_2 = -7$$



### Example Set: B

Solve the equation by factoring

$$x^2 - 4x - 12 = 0$$

$$x_1 = 6$$

$$x_2 = -2$$

$$y^2 + 10y + 9 = 0$$

$$y_1 = -9$$

$$y_2 = -1$$

$$2t^2 + 12t - 14 = 0$$

$$t_1 = -7$$

$$t_2 = 1$$

$$x^2 + x = 0$$

$$x_1 = 0$$

$$x_2 = -1$$



### Example Set: C

Solve the equation by factoring

$$4x^2 - 2x = 0$$

$$x_1 = 0$$

$$x_2 = 1/2$$

$$3x^2 - 13x - 10 = 0$$

$$x_1 = -2/3$$

$$x_2 = 5$$

$$5y - 8y^2 = 0$$

$$y_1 = 0$$

$$y_2 = 5/8$$

$$t(t+1) = 3(t+1)$$

$$t_1 = -1$$

$$t_2 = 3$$