

# Solve by Factoring

## Objective:

Write Quadratics in factored form  
Solve using zero product property

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## Factor and solve:

**Example 1)**  $x^2 - 2x - 3 = 0$

Step 1: factor

Step 2: set each factor equal to zero, remember that  
( $0 \cdot a = 0$ ) and solve

Step 1:  $x^2 - 2x - 3 = (x - 3)(x + 1) = 0$

Step 2:  $x - 3 = 0$  and  $x + 1 = 0$

Therefore  $x = 3, -1$

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Solve (write in factored form and use the zero product property):

$$x^2 + 12x + 36 = 0$$

$$x^2 - 17x + 66 = 0$$

$$x^2 - 5x - 14 = 0$$

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Before you can solve you must set the equation equal to zero!!

Example 2)  $x^2 - 4x = -3$

Step 1:

Step 2:

x=

5

Solve (this means factor and use the zeros)

3.  $2x^2 - 28x = -98$

4.  $3x^2 - 2x = 21$

Solve.

5.  $5x^2 + 6x = -1$