

Find the X-Intercepts

In order to find the **x-intercepts**, we must let **y = 0**. If $y = 0$, then we can solve the quadratic equation in order to find the x values. We can solve the quadratic equation by **factoring** or by using the **quadratic formula**.

This equation can be factored pretty easily, so it would be quicker to factor the equation in order to solve for x .

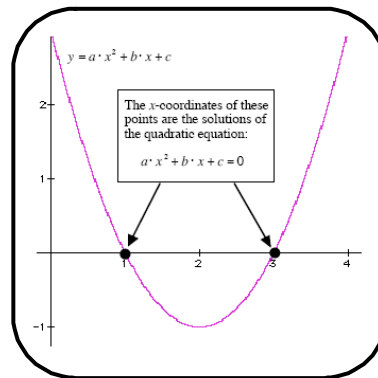
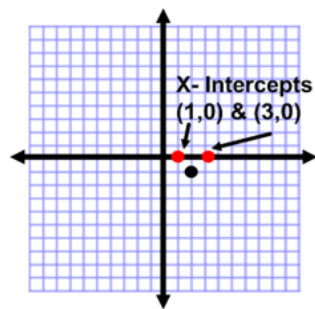
$$y = x^2 - 4x + 3$$

$$(x - 3)(x - 1) \quad \text{Factor the equation.}$$

$$x - 3 = 0 \quad x - 1 = 0 \quad \text{Set each factor equal to 0. (The Zero Factor property)}$$

$$x = 3 \quad x = 1 \quad \text{Solve each equation.}$$

The x-intercepts are (3,0) and (1,0)



Example 1: Solve

$$x^2 + 4x - 5 = 0$$

Step 1: Write the equation in standard form:	$x^2 + 4x - 5 = 0$
Step 2: Factor completely.	$(x + 5)(x - 1) = 0$
Step 3: Apply the Zero Product Rule	$x + 5 = 0$ or $x - 1 = 0$
Step 4: Solve the linear equations in step 3.	$x = -5$ or $x = 1$

Example 2: Solve

$$3x^2 + 13x = 10$$

Step 1: Write the equation in standard form:	$3x^2 + 13x - 10 = 0$
Step 2: Factor completely.	$(x + 5)(3x - 2) = 0$
Step 3: Apply the Zero Product Rule	$x + 5 = 0$ or $3x - 2 = 0$
Step 4: Solve the linear equations in step 3.	$x = -5$ $3x - 2 = 0$ $3x = 2$ $x = \frac{2}{3}$

