

# Solving Quadratics by Quadratic Formula

## Quick Review

If the equation you are solving is not easily factorable, you can always use the quadratic formula.

Given  $ax^2 + bx + c = 0$ ,

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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

$$x = \frac{1 \pm \sqrt{(-1)^2 - 4(2)(-3)}}{2(2)}$$

$$x = \frac{1 \pm \sqrt{25}}{4} = \frac{1 \pm 5}{4}$$

$$x = \frac{1 + 5}{4} = \frac{6}{4} = \boxed{\frac{3}{2}}$$

$$\text{and } x = \frac{1 - 5}{4} = \frac{-4}{4} = \boxed{-1}$$



Use the quadratic formula to solve these equations. Then follow your answers in order through the maze.

1.  $x^2 - 3x + 2 = 0$        $x = \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$
2.  $x^2 - 6x = 0$        $x = \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$
3.  $8x^2 - 16x + 8 = 0$        $x = \underline{\hspace{1cm}}$
4.  $3x^2 + 6x - 12 = 0$        $x = \underline{\hspace{1cm}}$
5.  $2x^2 + 3x - 5 = 0$        $x = \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$
6.  $x^2 - 4x - 4 = 0$        $x = \underline{\hspace{1cm}}$
7.  $3x^2 - 2x - 1 = 0$        $x = \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$
8.  $x^2 + 6x - 18 = 0$        $x = \underline{\hspace{1cm}}$
9.  $2x^2 - 8 = 0$        $x = \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$
10.  $x^2 - 10x + 9 = 0$        $x = \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$

