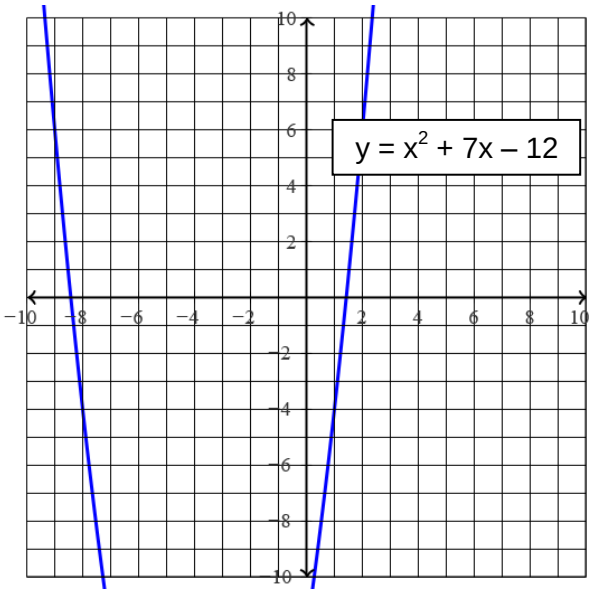
SOLVING QUADRATIC EQUATIONS
USING THE QUADRATIC FORMULA

Some quadratic equations cannot be factored, but that doesn't always mean there are no solutions to the equation.

For example $x^2 + 7x - 12$ can't be factored, but the related function $y = x^2 + 7x - 12$ does have two x-intercepts, or solutions, as shown in the graph. Notice that the x-intercepts are not "pretty" numbers, or integers.



An alternate way to solve a quadratic equation is by using the **Quadratic Formula**.

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Solve each equation using the quadratic formula. Round answers to the nearest tenth.

1) $x^2 + 7x - 12 = 0$ a = _____; b = _____; c = _____

2) $-2x^2 - 4x + 3 = 0$ a = _____; b = _____; c = _____

3) $6x^2 - 3x = 7$ a = _____; b = _____; c = _____

4) $x^2 + 2 = 3x$ a = _____; b = _____; c = _____

5) What are the solutions to the equation $x^2 - 4x = -1$?

A. $x = \frac{-4 \pm \sqrt{20}}{2}$

B. $x = \frac{4 \pm \sqrt{12}}{2}$

C. $x = \frac{-4 \pm \sqrt{12}}{2}$

D. $x = \frac{4 \pm \sqrt{20}}{2}$