

How to factor a trinomial or quadratic - 3/31/2013 www.askmath.weebly.com

When you factor a trinomial or quadratic, you are basically finding the roots of the function and you can use this to simplify and unravel the quadratic equation. In our case this can mean doing the FOIL backwards.

To factor a quadratic in the form of $ax^2 + bx + c = 0$ where a is 1.

MAKE SURE IT IS EQUAL TO ZERO

First find 2 numbers that add up to b and also multiply to c .

Then you put them in parenthesis and set both equal to zero and solve for x .

Ex. Factor $x^2 + 7x + 12 = 0$

3 and 4 add up to 7 and multiply to 12.

$$\begin{aligned} &= (x + 3)(x + 4) = 0 \\ &= x + 3 = 0 \text{ and } x + 4 = 0 \\ x &= \boxed{-3, -4} \end{aligned}$$

To factor a quadratic in the form of $ax^2 + bx + c$ where a is not 1.

MAKE SURE IT IS EQUAL TO ZERO

Multiply a with c . This is the new c . Factor regularly in this form. Divide by a and solve for x .

Ex. Factor $2x^2 + x - 6 = 0$

$$\begin{aligned} 2x^2 + x - 6 &= 0 \\ x^2 + x - 12 &= 0 \\ (x + 4)(x - 3) &= 0 \\ \left(x + \frac{4}{2}\right) \left(x - \frac{3}{2}\right) &= 0 \\ (x + 2)(2x - 3) &= 0 \text{ This is the finished factor form} \\ x &= \boxed{-2, \frac{3}{2}} \end{aligned}$$