

FACTORIZING TRINOMIALS TO BINOMIALS: GUIDED NOTES

Factoring trinomials, which have _____, means to rewrite the polynomial as a product of two binomials, which each have _____.

$$\underbrace{x^2 + bx + c} = \underbrace{(x + \underline{\hspace{1cm}})} \underbrace{(x + \underline{\hspace{1cm}})}$$

Tips for Factoring

- What you are multiplying to is the value of ____.
- What you are adding/subtracting to is the value of ____.

Examples

1) Factor the trinomial: $x^2 + 7x + 12$

Step 1: Identify b and c : $b = \underline{\hspace{1cm}}$ and $c = \underline{\hspace{1cm}}$.

Step 2: List the factor pairs that multiply to c :

Step 3: Find the factor pair that multiplies to c and adds/subtracts to b : ____ and ____.

Step 4: Plug the factors into the binomials: $x^2 + 7x + 12 = (x + \underline{\hspace{1cm}})(x + \underline{\hspace{1cm}})$

2) Factor the trinomial: $x^2 + x - 12$

Step 1: Identify b and c : $b = \underline{\hspace{1cm}}$ and $c = \underline{\hspace{1cm}}$.

Step 2: List the factor pairs that multiply to c :

Step 3: Find the factor pair that multiplies to c and adds/subtracts to b : ____ and ____.

Step 4: Plug the factors into the binomials: $x^2 + x - 12 = (x \underline{\hspace{1cm}})(x \underline{\hspace{1cm}})$



Factor each of the following trinomials, then check your work by expanding your binomials.

3) $x^2 + 9x + 20$

4) $x^2 - 8x - 20$