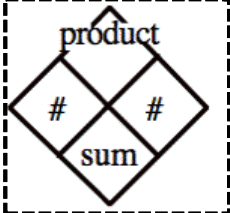


Factoring Trinomials ($ax^2 + bx + c$)

SWBAT factor trinomials in the form $ax^2 + bx + c$ with positive factors and an "a" term equal to 1.

Essential understanding: You can write some trinomials of the form $ax^2 + bx + c$ as the product to two binomials.

Example:

How to Factor a Trinomial in the Form $ax^2 + bx + c$					
<p>Step 1: Multiply your first term (a) and your last term (c)</p> <p>Step 2: Set up your X-Factor (what multiplies to "ac" that adds to "b")</p> <p>Step 3: Replace the original (b) term with the two numbers you just came up with</p> <p style="padding-left: 40px;">Step 4: Factor by grouping</p> <p style="padding-left: 40px;">Step 5: Factor out another GCF if one exists</p> <p>Step 6: FOIL to check work! (Don't forget your GCF in front!)</p>					
How to Factor a Trinomial in the Form $ax^2 + bx + c$					
<p>Step 1: Multiply your first term (a) and your last term (c)</p> <p>Step 2: Set up your T chart (what multiplies to "ac" that adds to "b")</p> <p>Step 3: Replace the original (b) term with the two numbers you just came up with</p> <p>Step 4: Factor by grouping</p> <p>Step 5: Factor out another GCF if one exists</p> <p>Step 6: FOIL to check work! (Don't forget your GCF in front!)</p>	<table style="border-collapse: collapse; margin: auto;"> <tr> <td style="padding: 5px;">Factors</td> <td style="padding: 5px;">Sums</td> </tr> <tr> <td style="border-right: 1px solid black; border-bottom: 1px solid black; width: 50px; height: 50px;"></td> <td style="border-bottom: 1px solid black; width: 50px; height: 50px;"></td> </tr> </table>	Factors	Sums		
Factors	Sums				

Example 1: What is the factored form of $5x^2 + 11x + 2$?

Factoring when ac is positive

Practice:

a. $6x^2 + 13x + 5$

b. $2x^2 + 13x + 6$

c. $3d^2 + 23d + 14$

Example 2: What is the factored form of $3x^2 + 4x - 15$.

Factoring when ac is negative

Practice:

a. $10x^2 + 31x - 14$

b. $5z^2 + 19z - 4$

c. $2k^2 - 13k - 24$

Example 3: The area of a rectangle is $2x^2 - 13x - 7$. What are the possible dimensions of the rectangle? Use factoring

To factor a polynomial completely:

- 1.
- 2.

Example 4: Factor a monomial out completely.

$$18x^2 - 33x + 12$$

Practice:

a. $12p^2 + 20p - 8$

b. $v^2 + 34v - 30$

c. $6s^2 + 57s + 72$

Your turn!

1. $3x^2 + 7x - 6$

2. $x^2 - 8x + 16$

3. $3x^2 + 8x + 5$

4. $x^2 - 12x + 20$

5. $7d^2 - 26d - 8$

6. $x^2 + 12x + 11$

7. $6t^2 + 25t + 11$

8. $c^2 + c - 20$

9. $5x^2 - 11x + 2$

10. $6x^2 + 23x + 7$

11. $20x^2 + 80x + 35$

12. $x^2 + 12x + 36$

13. $2x^2 + 11x + 14$

14. $x^2 - x - 6$

15. $2x^2 - x - 15$

Factoring Mixed Review

Directions: Factor each of the following completely. Remember to use GCF, X-Factor, grouping, or a mix of all three!

1. $x^2 + 12x + 35$

2. $x^2 - 9x + 18$

3. $x^2 + 5x$

4. $y^2 - 13y + 42$

5. $7d^2 - 20d - 3$

6. $x^2 + 6x - 40$

7. $x^2 + x - 132$

8. $a^2 - 10ab - 24b^2$

9. $6y^2 - 6y - 540$

10. $2x^2 - 2x - 60$

11. $m^2 - 3mn + 2n^2$

12. $t^2 + 23t + 42$

13. $n^2 + 3n - 18$

14. $5k^2 - 2k - 7$

15. $2n^2 + 15n + 7$

16. $x^2 + 12x + 36$

17. $15p^3 - 6p^2 - 45p$

18. $x^2 + 8x - 9$