Name: _____ Date: _____ # ____

Section 4-4 Factoring Quadratic Expressions

Learning Goal: To understand how to find common and binomial factors of quadratic expressions.
To understand how to factor special quadratic expressions.

Essential Questions: What are the advantages of a quadratic function in vertex form?
What are the advantages of a quadratic function in standard form?
How is any quadratic function related to the parent function of $y = x^2$?
How are the real solutions of a quadratic equation related to the graph of the related quadratic function?

Warm Up:

Write an equation of the line in point slope form with the given slope through the given point.

1. slope = -3, (0, 0)

2. slope= $\frac{2}{5}$, (6, 7)

Write the equation of the line with the given slope and y-intercept. Use slope intercept form. Then rewrite the equation in standard form.

3. m = -6, b = 9

4. Solve using substitution $\begin{cases} x - 2y = 3 \\ 3x + y = -5 \end{cases}$

Vocabulary:

Factoring- rewriting and expression as a product of its factors

Greatest common factor (GCF) – a common factor of all the terms in the expression. It is the common factor with the greatest coefficient ad the greatest exponent.

You Try:

1. x^2+7x+6
2. $4x^2-28x$
3. $2x^2+5x-12$
4. $x^2+14x+40$
5. $9x^2+9x-18$
6. $4x^2+8x+12$
7. $4x^2+7x+3$
8. $2x^2-7x+6$
9. $-x^2+14x+32$

More Vocabulary:

Perfect Square Trinomial – a trinomial that is the square of a binomial

$$a^2+2ab+b^2=(a+b)^2 \text{ or } a^2-2ab+b^2=(a-b)^2$$

Difference of two squares - $a^2-b^2=(a+b)(a-b)$

Try Some:

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

11. $81x^2 - 100$

12. $-25x^2 + 49$

13. $4x^2 - 28x + 49$

14. $-36x^2 - 132x - 121$

15. $9x^2 + 144$

Closure: What is the purpose of factoring quadratic expressions?

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Assignment: section 4.4 #
18,21,24,27,30,32,33,35,36,38,40,42,47,50,51,52,53,55,60,61,62,68,70,72,75,78 (26 problems)