

Name: _____
8A; Algebra 1

Date: _____
Period _____

Factoring Trinomials – Part II

We have already learned how to factor trinomials in the form of $ax^2 + bx + c$ where $a = 1$. Today we will focus on factoring trinomials in the form $ax^2 + bx + c$ where $a \neq 1$.

Examples: Factor each trinomial. Use FOIL to check your answers.

1) $2x^2 + 7x + 6 =$

2) $2x^2 + 5x + 2 =$

3) $3x^2 + 10x + 8 =$

4) $4x^2 - 12x + 5 =$

5) $16x^2 + 8x + 1 =$

6) $10a^2 - 9a + 2 =$

7) $-23y - 6 + 18y^2 =$

8) $4x^2 - 5xy - 6y^2 =$

Procedure for factoring trinomials of the form $ax^2 + bx + c$ where $a \neq 1$:

- 1) Make two sets of empty parenthesis. ()()
 - 2) Determine what signs should be put inside the parenthesis.
 - (a) If the last sign is “+” the signs should be the same. (The same as the middle sign.)
 - (b) If the last sign is “-“ the signs should be different.
 - 3) Put the first term of the trinomial, without the exponent, in the first position in each parenthesis.
 - 4) Multiply the first and last numbers and use that product to determine what factors go into the second position in the parenthesis.
 - (a) If the signs are the same, the factors should add to give you the middle number.
 - (b) If the signs are different, the factors should subtract to give the middle number. (The larger factor goes with the middle sign.)
 - 5) Divide each of the resulting binomials by the GCF of the terms in each parenthesis. The final results are the factors of the trinomial.
 - 6) Check your answer by using **FOIL**.
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Extra Practice:

- 1) The following trinomial represents the area of a rectangle. Find two binomials that could be expressions for the dimensions of the rectangle.: $2x^2 + x - 6$

- 2) The following trinomial represents the area of a square. Find a binomial that could be an expression for the measure of each side of the square.: $25x^2 + 20x + 4$

- 3) The area of a poster board is $3y^2 + 2y - 5$ inches. The width is $y-1$ inches.
 - A. Write an expression for the length of the poster board.

 - B. Find the dimensions of the poster board when $y = 7$.