Name KEY

Unit 8 Lesson 2: Factoring Quadratics

Quadratic: A QUADRATIC is an equation, expression, or function with a degree of 2.

Standard Form: Standard Form of a QUADRATIC is ax^2+bx+c.

Today we will be factoring QUADRATICS where $a \neq 1$ into two BINOMIALS.

Steps to Factor Quadratics

1. Take out the GREATEST COMMON FACTOR (GCF)
2. Identify a, b, and c. List the factors of a and c.
3. Place the possible factors of a as the FIRST terms. Place the possible factors of c as the LAST terms.
4. Add the OUTTERS and the INNERS to see if you get your b value. If necessary, change the SIGNS accordingly. If you do not get your b value, keep trying all possible COMBINATIONS.
5. When your OUTER terms and INNER terms combine to equal b, your expression is factored.
6. Always CHECK your answer by using the F·O·I·L method.

Directions: Factor the following quadratic expressions.

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

(FIRST a LAST)(FIRST a LAST)

$(x+2)(2x+1)$

b. $-2x^2-x+3$

GET RID OF NEGATIVES

$-1(2x^2+x-3)$

$-1(2x+3)(x-1)$

c. $6x^2-16x+8$

$2(3x^2-8x+4)$

$2(3x-2)(x-2)$

d. $-6x^2+14x+12$

$-2(3x^2-7x-6)$

$-2(x-3)(3x+2)$

e. $4x^2-5xy+y^2$

$(4x-y)(x-y)$

f. $6x^2+19xy+15y^2$

$(2x+3y)(3x+5y)$

g. x^2+x-12 NOTHING EASY.

$(x+4)(x-3)$

h. $-4x^2+12x-8$

$-4(x^2-3x+2)$

$-4(x-1)(x-2)$

$x-1=0$ $x-2=0$

$x=1$ $x=2$