

Factoring Trinomials- Bottom's Up Method

Main Idea:

Factor and Solve Complex Trinomials

Standards 11.0 and 14.0

$$2p^2 + 14p + 24.$$

GCF

$$2(p^2 + 7p + 12)$$

$$2(p+4)(p+3)$$

$$\begin{array}{r} +12 \\ \hline \end{array}$$

$$6 + 2 = 8$$

$$12 + 1 = 13$$

$$4 + 3 = 7$$

$$6x^2 + 15x - 9$$

$$3(2x^2 + 5x - 3)$$

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

$$\frac{6}{6-1} = 5$$

$$\frac{2}{2-1}$$

Steps for Factoring Quadratic Polynomials Using the .Bottoms Up. Method

1. Write the Quadratic Polynomial in Stand Form:
 $\underline{A}x^2 + Bx + C$
2. **Factor the Greatest Common Factor** *2 terms binomial*
3. Determine A, B, and C
4. Set up two Binomials with signs
5. Multiply A * C *←*
6. Find the factors of A * C
7. Write factors in the binomials.
8. Divide the last term in both binomials by A
9. Simplify the fractions
10. If one term in the binomial is a fraction use .Bottoms Up. by bringing the denominator of the fraction in front of the x in the binomial.
11. Check the result

Lets put it all together...

Pull $3x^2 + 2x - 8$

$$x^2 + 2x - 24$$

$$(x + 6)(x - 4)$$

$$\frac{3}{3} \left(\frac{3}{3} \right)$$

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

$$\frac{-24}{6 - 4} = 2$$

$$\frac{3}{3} = 1$$

$18y^2 + 9y - 5 = 0$ Pull

$y^2 + 9y - 90 = 0$

$(y + 15)(y - 6)$

$(\frac{y+5}{18})$

$(\frac{y-1}{18})$

$(\frac{y+5}{18})(\frac{y-1}{18})$

$\frac{-90}{30-3=27}$
 $15-6=9$