

Factoring Trinomials

Section 10.6

Factoring Trinomials

- Trinomial is of the form: $ax^2 + bx + c$
- Steps
 - Multiply the **c-term** by the **a-term**
 - Find factors of **ac** that add to get the **b-term**
 - Fill in the parenthesis using the correct signs
 - Divide by **a** as needed
 - Reduce fractions and rewrite parenthesis

Examples

1.) $2x^2 + 11x + 5$

$$x^2 + 11x + 10 \quad \begin{matrix} 1 \cdot 10 \\ 2 \cdot 5 \end{matrix}$$

$$(x + \frac{1}{2})(x + \frac{10}{2})$$

$$\boxed{(2x+1)(x+5)}$$

2.) $3x^2 - 4x - 7$ | .21

$$x^2 - 4x - 21 \quad \begin{matrix} 3 \cdot 7 \\ 3 \cdot 7 \end{matrix}$$

$$(x + \frac{3}{3})(x - \frac{7}{3})$$

$$\boxed{(x+1)(3x-7)}$$

Examples (cont.)

$$3.) \quad 2x^2 + 21x - 11 \quad | \cdot 22 \quad | \cdot 11$$

$$x^2 + 21x - 22$$

$$(x - \frac{1}{2})(x + 22)$$

$$\boxed{(2x-1)(x+11)}$$

$$4.) \quad 6x^2 - 19x + 15 \quad | \cdot 10 \quad | \cdot 45$$

$$x^2 - 19x + 90$$

$$(x - \frac{9}{6})(x - \frac{10}{6})$$

$$(x - \frac{3}{2})(x - \frac{5}{3})$$

$$\boxed{(3x-3)(3x-5)}$$

Examples (cont.)

5.) $6x^2 - 2x - 8$

1. 48
2. 24
3. 16
4. 12
5. 8

$$x^2 - 2x - 48$$

$$(x + \frac{6}{6})(x - \frac{8}{6})$$

$$2 \boxed{(x+1)(x-4)}$$

$$(x+1)(3x-4)$$

6.) $8x^2 - 14x - 15$

1. 120
2. 60
3. 40
4. 30
5. 24
6. 20

$$x^2 - 14x - 120$$

$$(x + \frac{6}{8})(x - \frac{20}{8})$$

$$(x + \frac{3}{4})(x - \frac{5}{4})$$

$$\boxed{(4x+3)(2x-5)}$$

Class work

◎ Wkst 10.6A # 3-18

Homework

- Pg 614# 18-29