Factoring Trinomials

Section 10.6

Factoring Trinomials

- Trinomial is of the form: $ax^2 + bx + c$

- Steps
  - Set the equation = 0
  - 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.) $2x^2 + 11x + 5$

$\times 2$

$x^2 + 11x + 10$

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

$(2x+1)(x+5)$

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

$\times 3$

$7 - 3$

$3 - 7$

$x^2 - 4x - 21$

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

$(x+1)(3x-7)$

Examples (cont.)

3.) $2x^2 + 21x - 11$

$22 \cdot -1$

$1 - 22$

$x^2 + 21x - 22$

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

$(x+11)(2x-1)$

4.) $6x^2 - 19x + 15$

$x^2 - 19x + 90$

$(x - 9\frac{3}{2})(x - 10\frac{5}{3})$

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

Examples (cont.)

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

$x^2 - 2x - 48$ $\quad 8 \cdot -6$, $6 \cdot -8$

$(x + \frac{6}{6})(x - \frac{8}{6}\ \frac{4}{3})$

$2(x+1)(3x-4)$

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

$3x^2 - x - 12$

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

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

$x^2 - 14x - 120$

$(x + \frac{4}{8}\ \frac{3}{4})(x - \frac{20}{8}\ \frac{5}{2})$

$(4x+3)(2x-5)$

$1 \cdot 120$
$2 \cdot 60$
$3 \cdot 40$
$4 \cdot 30$
$5 \cdot 24$
$6 \cdot 20$
$8 \cdot 15$
$10 \cdot 12$

Solving Quadratics

- What would you do if you had to solve the quadratic equation?
- Go back and solve 2 examples

(6) $8x^2 - 14x - 15 = 0$

$(4x+3)(2x-5) = 0$

$4x+3=0$ | $2x-5=0$

$-3 \quad -3$ | $+5 \quad +5$

$\frac{4x}{4} = \frac{-3}{4}$ | $\frac{2x}{2} = \frac{5}{2}$

$x = -3/4$ | $x = 5/2$

Class work

- Pg 607 # 12-14

wkst 10.5-10.6

Homework

- 614 # 18-31, 33-35

  607# 31-33