**4.4 Factoring Quadratic Expressions**

**Monomial:** expression with one term (ex: 5)

**Binomials**: expressions with two terms (ex: x + 3)

**Trinomial:** expression with three terms (ex: x2 + 8x + 15)

**Factoring**: is rewriting an expression as a product of its factors (reverse FOIL)… write a trinomial as a binomial

Review FOIL:

**1:Factoring By Finding a Common Factor**

**2: Factoring**

**x2 + bx + c = (x + m)(x + n)**

= x2 + (m + n)x + m\*n

* b = m + n
* c = m\*n

Steps:

1) Find 2 numbers, m and n, that multiply to give you c, and add to and get b

2) Put those numbers in the form (x + m)(x + n)

Example:

List the factors of 8:

Sum of those factors:

Note: Since both 8 and 6 were positive we only needed the positive factors

Example:

List the factors of -10:

Sum of those factors:

Note: Since c is negative (-10) we know signs have to be both +and-

Since b is negative we know the bigger number is negative

Extra Example:

x2 – 12x – 28 y2 + 2y + 1

q2 + 19q + 90 x2 – 7x – 10

**3: Factoring**

**ax2 + bx + c = (kx + m)(lx + n)**

= k\*lx2 + (k\*n + l\*m)x + m\*n

* a = k\*l
* b = k\*n + l\*m
* c = m\*n

Steps:

1)Find and list the factors of a and c

2) Set up the proportion: 

3) Cross multiply to get numbers that add and give you b.

(Guess and Check)

Example

1. 2x2 + x – 3
2. 3x2 – 17x + 10

Extra Examples:

8z2 + 18z + 9 6x2 – 9x + 5

11m2 + 14m – 16

**Special Cases:**

**Perfect Square**: a number whose square root is an integer

(ex. 4, 9, 16)

Examples : a2 – b2 = (a + b)(a – b)

Example:

**HMWK: page 221 #15-49 (odd), 59-63 (odd)**

**and/or WS’s on Factoring**