Trinomial Factoring

Pre-Practice: Multilpy the following pairs of binomials using the FOIL rule.

a) $(x + 2)(x + 5)$ b) $(x + 5)(x - 4)$ c) $(x - 3)(x + 6)$

The answers above take the form of: $x^2 + bx + c$

Look at answer a)...

How were the numbers 2 and 5 used to make the 7? _____

How were the numbers 2 and 5 used to make the 10? _____

When factoring a trinomial, we are doing the opposite of FOIL/expanding. We are looking for two binomials that multiply to make the trinomial.

Example

Factor the following:

a) $x^2 + 6x + 8$ b) $x^2 + 9x + 18$ c) $x^2 + 2x - 24$

d) $x^2 - 4x - 21$ e) $x^2 - 8x + 15$ f) $x^2 + 10x + 25$

g) $2x^2 + 8x + 6$ h) $-3x^2 - 6x + 45$

Practice – Common Factoring and Trinomial Factoring

1. Common factor the following:

a) $12x - 8$ b) $-3x^2 + 9x$ c) $4x^2 - 12x + 24$

d) $13x - 7x^2$ e) $3xy - 6x$ f) $15x^2 - 10x + 13$

2. Trinomial factor the following:

a) $x^2 + 9x + 20$ b) $x^2 - 7x + 12$ c) $x^2 - 3x - 54$

d) $x^2 + x - 12$ e) $x^2 + 2x - 48$ f) $x^2 - 5x - 6$

3. Common factor then trinomial factor.

a) $2x^2 + 12x + 16$ b) $3x^2 - 15x + 12$ c) $-2x^2 - 20x - 32$