Name:_____ Hour: _____ Date: _____

NOTES: Intro to Factoring

Goals: #1 - I can factor out the GCF of polynomials. 

#2 - I can factor 4 terms by grouping.

Homework: MORE PRACTICE.

Exploration #1: Work with a partner and answer the following questions.

1. Multiply the following polynomials.
   a. $3x(3x^2 - 5)$ b. $7x^2(2x - 3)$

2. Find the greatest common factor (GCF) of the pair of numbers.
   a. 15, 30 b. 32, 40 c. 1, 3

Notes:

To multiply polynomials, we _____. We use this same idea to _____ polynomials.

When factoring a polynomial, we _____ out the _____ of the polynomials.

Example #1: Factor out the greatest common factor.

1. $9x^3 - 15x$ 2. $14x^3 - 21x^2$

Name:_____ Hour: _____ Date: _____

3. $3n^3 - 33n^2 + 12n$

4. $8y^3 - 2y$

You practice: Factor out the greatest common factor.

1. $4y^3 - 10y^2$

2. $9x^3 + 6x^2 + 18x$

Notes:

When we see _____ terms in the polynomial, we _____ by _____.

EXAMPLE: Factor the polynomial by grouping.

$$x^3 - 2x^2 - 9x + 18$$

Name:_____ Hour: _____ Date: _____

Example #1: Factor the polynomial by grouping.

1. $2x^3 - 8x^2 + 3x - 12$
2. $10x^2 - 15x + 2x - 3$

You practice: Factor the polynomial by grouping.

1. $2x^3 - 3x^2 - 4x + 6$
2. $10x^2 - 7x - 10x + 7$

Name:_____ Hour: _____ Date: _____

MORE PRACTICE:

1. Factor out the greatest common factor.

   a. $2x + 2$

   b. $6x^2 - 15x$

   c. $3s^4 + 16s$

   d. $5d^6 - 2d^2$

   e. $7w^5 - 35w^2$

   f. $12a^5 - 8a$

   g. $8x^3y^2 - 16x^4y$

   h. $18x^2y - 4x^3y$

2. Factor by grouping.

   a. $x^3 + x^2 + 2x + 2$

   b. $a^3 + 13a^2 - 5a - 65$

   c. $z^3 - 4z^2 + 3z - 12$

   d. $5d^6 - 2d^2$

   e. $4y^3 - 7y^2 - 16y + 28$

   f. $m^3 - 3m^2 - 4m + 12$