Section 6.4: FACTORING SPECIAL FORMS

When you are done with your homework you should be able to…

- Factor trinomials by trial and error
- Factor trinomials by grouping

WARM-UP:

Factor:

a. $3a^2 - ab - 14b^2$

c. $80z^3 + 80z^2 - 60z$

b. $12x^2 - 33x + 21$

d. $-10x^2y^4 + 14xy^4 + 12y^4$

THE DIFFERENCE OF TWO SQUARES

If _____ and _____ are real numbers, or _____ expressions, then

The _____ of the _____ of _____ _____

factors as the _____ of a _____ and a _____

of those terms.

16 PERFECT SQUARES

$1 =$ _____	$25 =$ _____	$81 =$ _____	$169 =$ _____
$4 =$ _____	$36 =$ _____	$100 =$ _____	$196 =$ _____
$9 =$ _____	$49 =$ _____	$121 =$ _____	$225 =$ _____
$16 =$ _____	$64 =$ _____	$144 =$ _____	$256 =$ _____

Example 1: Factor.

a. $x^2 - 144$

b. $16x^2 - 196y^2$

c. $25 - 4x^{10}$

d. $18x^3 - 2x$

FACTORING PERFECT SQUARE TRINOMIALS

Let _____ and _____ be real numbers, _____, or _____ expressions.

1. $A^2 + 2AB + B^2 =$ _____

2. $A^2 - 2AB + B^2 =$ _____

- The _____ and _____ terms are _____ of _____ or _____.
- The _____ term is _____ the _____ of the _____ being _____ in the _____ and _____ terms.

Example 2: Factor.

a. $9x^2 + 6x + 1$

b. $x^2 + 4x + 4$

c. $x^2 - 18xy + 81y^2$

d. $2y^2 - 40y + 200$

FACTORING THE SUM OR DIFFERENCE OF TWO CUBES

Let _____ and _____ be real numbers, _____, or _____ expressions.

1. $A^3 + B^3 =$ _____

2. $A^3 - B^3 =$ _____

Example 3: Factor.

a. $x^3 + 64$

b. $8y^3 - 1$

c. $128 - 250y^3$

d. $125x^3 + y^3$

Example 4: Factor completely

a. $25x^2 - \frac{4}{49}$

b. $20x^3 - 5x$

c. $(y+6)^2 - (y-2)^2$

d. $0.64 - x^3$