Algebra 1 Name _____

7-7 Factoring Special Cases Date _____ **A#12**

Goal: Use patterns to factor special polynomials.

I. Warm Up: Use snowflake to factor each of the following:

a. $x^2-3x-54$ **b.** $a^2-12a+36$ **c.** a^2-36 **d.** $b^2+14b+49$

II. The Rules for the Day

Super-Secret Rules to Factor Special Polynomials Really Fast	
Difference of squares become _____	A trinomial with perfect squares on the end will probably become a _____ of a _____
$a^2-b^2=$	$a^2-2ab+b^2=$ $a^2+2ab+b^2=$
Ex A Factor $36-x^2$.	**Ex B** Factor $n^2+10n+25$.

****** When in doubt, work it out (with snowflake)******

III. Examples

Ex C: What is the factored form of the following?

a. $x^2+14x+49$ b. x^2-49

Try It! What is the factored form of the following?

1. $x^2-8x+16$ **2.** $64-b^2$

Ex D: What is the factored form of the following?

a. $9x^2-30x+25$ b. $16x^2-121$

Try It! What is the factored form of the following?

3. $100x^2-9$ **4.** $4n^2+12n+9$

Example E: Factor Completely

a. $3x^2-60x+300$ b. $3x^3y-12xy^3$

Try It! What is the factored form of the following?

5. $50x^2-32y^2$ **6.** $4x^3+24x^2+36x$

CONCEPT SUMMARY Factoring Special Cases of Polynomials

	Factoring a Perfect-Square Trinomial	Factoring a Difference of Two Squares
ALGEBRA	$a^2+2ab+b^2=(a+b)^2$ $a^2-2ab+b^2=(a-b)^2$	$a^2-b^2=(a+b)(a-b)$
WORDS	Use this pattern when the first and last terms are perfect squares and the middle term is twice the product of the expressions being squared.	Use this pattern when a binomial can be written as a difference of two squares. Both terms must be perfect squares.