Section 6.2: FACTORING TRINOMIALS WHOSE LEADING COEFFICIENT IS 1

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

 π Factor trinomials of the form $x^2 + bx + c$

WARM-UP:

Multiply:

a.
$$(x+1)(x+8)$$

c.
$$(x+1)(x-8)$$

b.
$$(x-1)(x-8)$$

d.
$$(x-1)(x+8)$$

A STRATEGY FOR FACTORING $ax^2 + bx + c$: USING GROUPING

- 1. Multiply the leading coefficient (in this case 1) and the constant, _____.
- 2. Find the _____ of ____ whose ____ is ____.
- 3. Rewrite the _____ term, ____, as a _____ or a

_____ using the factors from step 2.

4. _____ by _____.

Example 1: Factor each trinomial

a.
$$x^2 + 9x + 8$$

b.
$$x^2 + 7x + 10$$

c.
$$x^2 - 13x + 40$$

d.
$$x^2 + 3x - 28$$

e.
$$x^2 - 4x - 5$$

f.
$$w^2 + 12w - 64$$

g.
$$y^2 - 15y + 5$$

h.
$$x^2 - 9xy + 14y^2$$

Some	can be	using more than one	
	Always begin	by looking for the	
		and, if there is one, i	t
out! A polynomial is		when it is written as	
the	of		

Example 4: Factor completely

a.
$$3x^2 + 21x + 36$$

c.
$$y^4 - 12y^3 + 35y^2$$

b.
$$20x^2y - 5xy - 120y$$

d.
$$(a+b)x^2-13(a+b)x+36(a+b)$$

APPLICATION

You dive directly upward from a board that is 48 feet high. After t seconds, your height above the water is described by the polynomial $-16t^2 + 32t + 48$.

a. Factor the polynomial completely.

b. Evaluate both the original polynomial and its factored form for t=3.

c. Do you get the same answer? Describe what this answer means?