

## 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, \_\_\_\_\_ it  
**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.  $(a+b)x^2 - 13(a+b)x + 36(a+b)$

