

### Factoring Trinomials

$$ax^2 + bx + c \quad (a = 1)$$

1. Simplify the expression. (GCMF)
2. Draw sum and product "X"
3. Put the b at the top and a \* c at the bottom.
4. Find two factors that add to the top number and multiply to the bottom number.

1.  $x^2 + 7x + 6$



$$(x+1)(x+6)$$

a) What are the factors of 6?

b) Add each pair of factors together.

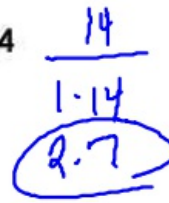
Which factors have a sum of 7?

$$(x+1)(x+6)$$

$$x^2 + 6x + x + 6$$

$$x^2 + 7x + 6$$

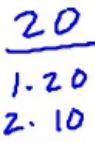
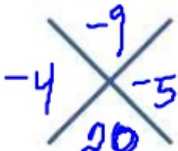
2.  $a^2 + 9a + 14$



$$(x+2)(x+7)$$

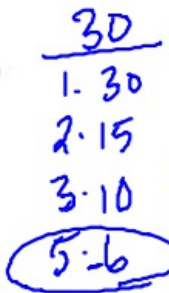
$$(a+2)(a+7)$$

3.  $m^2 - 9m + 20$



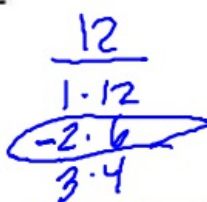
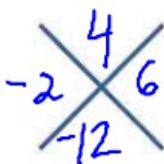
$$(x-5)(x-4)$$

4.  $p^2 - p - 30$



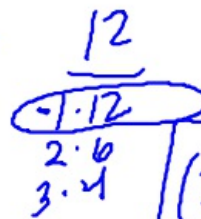
$$(x-b)(x+5)$$

5.  $x^2 + 4x - 12$



$$(x-2)(x+6)$$

6.  $2x^2 + 22x - 24$



$$2(x^2 + 11x - 12)$$

$$(x-1)(x+12)$$

Unit 7: Factoring Quadratic Equations

Factoring II: when  $a = 1$

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

1.  $w^2 + 14w + 48$

2.  $d^2 - 8d + 7$

3.  $k^2 - 4k - 60$

4.  $r^2 + r - 20$

5.  $3x^2 + 21x + 30$

6.  $3b^2 - 3b - 36$

7.  $2z^2 + 14z + 24$

8.  $-2s^2 - 2s + 12$

**Challenge!**

a. Factor:  $-40x^2 + 560x - 1800$