

Date:

Section:

Objective:

**Steps for Factoring a Trinomial of the Form  $x^2 + bx + c$  (the leading coefficient is 1):**

\*\*\*\*\*1.

2.

3.

4.

5.

**Examples:** Factor the following polynomials.

a)  $x^2 + 11x + 30$

b)  $x^2 - 3x - 10$

c)  $q^2 - 15q + 56$

$ac = \underline{\hspace{2cm}}$   $b = \underline{\hspace{2cm}}$

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Factors of  $ac$ :

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Which factors add to  $b$ ?

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Factor the expression.

Factor the expression.

Factor the expression.

d)  $2b^2 + 40b + 144$

e)  $w^2 - 18w + 45$

f)  $-5g^2 + 25g - 30$

g)  $u^2 + 6u - 9$

h)  $t^2 + 6t - 40$

i)  $h^3 + h^2 - 12h$

j)  $n^2 - 5n - 6$

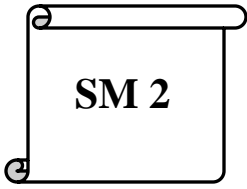
k)  $m^2 + 8m + 12$

l)  $3x^2 - 6x + 15$

m)  $x^2 - 4$

o)  $3x^2 - 27$

p)  $x^2 + 144$



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**Review Examples:** Multiply the following:

a)  $(a+4)(a-4)$

b)  $(3-k)(3+k)$

c)  $(2m+7)(2m-7)$

d)  $(x+6)(x+6)$

**Factoring a Difference of Squares:**

- A polynomial of the form  $A^2 - B^2$  is called a \_\_\_\_\_

- Differences of squares always factor as follows: \_\_\_\_\_

★ This only works if \_\_\_\_\_ **and**

\_\_\_\_\_.

★ Don't forget to check for a \_\_\_\_\_!

**Steps:**

1.

2.

3.

**Examples:** Factor the following polynomials.

a)  $x^2 - 25$

b)  $m^2 - 81$

c)  $w^2 + 36$

d)  $49 - n^2$

e)  $4t^2 - 1$

f)  $9z^2 - 16$

g)  $64y^2 - 81x^2$

h)  $144k^2 + 25$

i)  $2a^2 - 242$

j)  $3 - 75p^2$

k)  $100q^4r^2 - 9$

l)  $x^4 - 16$