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**(A) Lesson Objectives:**

- a. Review binomial multiplication using grids & distribution & looking for patterns.
- b. Factor trinomials in the form of  $x^2 + bx + c$  using grids.
- c. Factor trinomials in the form of  $x^2 + bx + c$  using factors of the constant
- d. Illustrate the factoring process in the context of areas of rectangles.

**(B) Binomial Expansion:**

a. Expand:

(i)  $(x + 4)(x + 3)$

(ii)  $(x - 2)(x - 5)$

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

(v)  $(x + 2)(x + 9)$

(vi)  $(x - 3)(x - 6)$

(vii)  $(x - 7)(x + 4)$

(iv)  $(x + A)(x + B)$

**(C) INVESTIGATION: Setting a Context for factoring:**

a. What binomial would make the following algebraic statement true?

i.  $x^2 + 10x + 21 = \boxed{\phantom{000000}} (x + 7)$ . Then explain HOW you determined your answer.

ii.  $x^2 - 3x + 2 = \boxed{\phantom{000000}} (x - 2)$ . Then explain HOW you determined your answer.

iii.  $x^2 - 2x - 15 = \boxed{\phantom{000000}} (x - 3)$ . Then explain HOW you determined your answer.

iv.  $x^2 + 7x + 12 = \boxed{\phantom{000000}} \boxed{\phantom{000000}}$  Then explain HOW you determined your answer.

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(D) **Number Combinations**: For the following pairs of numbers, determine a pair of integers that will multiply to the product indicated and then the same 2 integers will add to give the sum indicated:

a. \_\_\_\_\_ x \_\_\_\_\_ = 6 and \_\_\_\_\_ + \_\_\_\_\_ = 5.

b. \_\_\_\_\_ x \_\_\_\_\_ = -6 and \_\_\_\_\_ + \_\_\_\_\_ = 1.

c. \_\_\_\_\_ x \_\_\_\_\_ = 24 and \_\_\_\_\_ + \_\_\_\_\_ = 11.

d. \_\_\_\_\_ x \_\_\_\_\_ = 12 and \_\_\_\_\_ + \_\_\_\_\_ = -7.

e. \_\_\_\_\_ x \_\_\_\_\_ = -18 and \_\_\_\_\_ + \_\_\_\_\_ = 7.

f. \_\_\_\_\_ x \_\_\_\_\_ = 5 and \_\_\_\_\_ + \_\_\_\_\_ = 4.

g. \_\_\_\_\_ x \_\_\_\_\_ = 35 and \_\_\_\_\_ + \_\_\_\_\_ = -12.

(E) **In Class Examples: Optional Methods**

We will use examples from <http://www.themathpage.com/alg/factoring-trinomials.htm> to show HOW to factor trinomials using (i) grids, (ii) algebra tiles (I will use <http://staff.argyll.epsb.ca/jreed/math9/strand2/2210.htm> as a reference (iii) products/sums

(F) **Homework/Resources**

- **HW: from Textbook** →

<http://www.teacherweb.com/NY/Arlington/AlgebraProject/U6L8FactoringTrinomials.pdf>

- Video help from OnlineMathLearning with inequalities:

- o <http://www.onlinemathlearning.com/factor-trinomials.html>
- o <http://www.onlinemathlearning.com/factor-trinomials-2.html>

- Reading from PurpleMath

- o <http://www.purplemath.com/modules/factquad.htm>

- Algebra Tiles links

- o <http://www.x-power.com/Flash/Tools/AlgebraTiles.html>
- o <http://mathsnet.net/algebra/tiles1.html>
- o [http://nlvm.usu.edu/en/nav/frames\\_asid\\_189\\_g\\_1\\_t\\_2.html?open=activities](http://nlvm.usu.edu/en/nav/frames_asid_189_g_1_t_2.html?open=activities)