

Date:

Title:

(A) Lesson Objectives:

- a. Review binomial multiplication using grids & distribution.
- b. Factor trinomials in the form of $ax^2 - bx - c$ using grids and decomposition.
- c. Factor perfect square trinomials in the form of $a^2 + 2ab + b^2$ using grids and addition/multiplication.
- d. Illustrate the factoring process in the context of areas of rectangles.

(B) Binomial Expansion:

- a. Expand and simplify using the binomial expansion method (FOIL):

(i) $(4x + 4)(x - 2)$

(ii) $(2x + 3)(2x + 2)$

(iii) $(2x - 1)(3x + 6)$

(iv) $(x - 2)(3x + 4)$

(v) $(2x - 7)(4x - 3)$

(vi) $(x + 4)(2x - 1)$

(vii) $(x - 2)(3x + 4)$

(viii) $(2x - 3)(5x + 2)$

(ix) $(2x + 5)(3x - 2)$

(C) INVESTIGATION: Setting a Context for factoring:

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

i. $2x^2 + 13x - 7 = \boxed{}(x + 7)$. Then explain HOW you determined your answer.

ii. $4x^2 - 17x - 15 = \boxed{}(x - 5)$. Then explain HOW you determined your answer.

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(D) Applications:

- a. A rectangle has a width given by the expression and a length given by the expression $4x + 3$ and an area given by the expression $8x^2 + 18x + 9$

- i. Label the information on the diagram provided.
- ii. Determine an expression for the width of the rectangle.
- iii. Determine the area and perimeter if $x = 2$ cm.



- b. A rectangle has a width given by the expression and a length given by the expression $3x + 4$ and an area given by the expression $9x^2 + 24x + 16$:

- i. Label the information on the diagram provided.
- ii. Determine an expression for the width of the rectangle.
- iii. Is this shape a rectangle? Why or why not?
- iv. Determine the area and perimeter if $x = 3$ cm.



(E) In Class Examples: Optional Methods

We will use examples from

<http://www.kutasoftware.com/FreeWorksheets/Alg1Worksheets/Factoring%202.pdf>

<http://www.teacherweb.com/NY/Arlington/AlgebraProject/U6S1MorePracticeinCompleteFactoring.pdf>

(F) Homework/Resources

- **HW:** → (easier Q to work with):
- <http://www.kutasoftware.com/FreeWorksheets/Alg1Worksheets/Factoring%201.pdf>
- <http://www.teacherweb.com/NY/Arlington/AlgebraProject/U6L9FactoringTrinomialsCompletely.pdf>

- Video help from OnlineMathLearning with inequalities:
 - o <http://www.onlinemathlearning.com/factor-standard-trinomials-2.html>

- Reading from The Math Page
 - o <http://www.purplemath.com/modules/factquad2.htm>