



STUDENT \_\_\_\_\_

GROUP \_\_\_\_\_

INSTRUCTOR \_\_\_\_\_

DATE \_\_\_\_\_

## Math Lab Lesson #6 Classwork:

### Multiplying Binomials and Factoring Quadratics

#### WHAT TO DO:

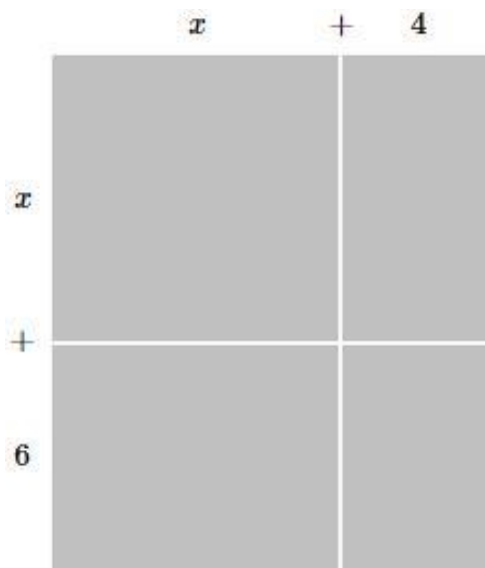
- Watch the video and take notes on this Classwork sheet
- Pause and repeat any parts of the video that you want to review again. It's not a race!
- Answer any questions embedded in the video
- After watching the video, complete the Practice Problems.
- Create one or two flashcards that relate to what you learned from the video and the Practice Problems.
- Then, go to the next video and repeat!

#### ★ Video: Multiplying Binomials and the Area Model

★ Example: Find the product:

$$(x + 4)(x + 6)$$

#### The Area Model





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★ More Examples:

$$(x - 4)(x + 6)$$

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$$(x + 4)(x - 6)$$

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$$(x - 4)(x - 6)$$

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★ IN GENERAL:

$$(x + a)(x + b) = x^2 + (a + b)x + ab$$



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**→ Practice Problems: Multiplying Binomials: The Area Model**

In the problems below, find the product:

1.

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

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2.

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

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3.

$$(x + 3)(x - 8)$$

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4.

$$(x - 3)(x - 4)$$



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5.

$$(x + 3)(x + 3)$$

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6.

$$(x + 3)^2$$

**Hint: Look at #5**

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7.

$$(x + 5)^2$$

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8.

$$(x - 4)^2$$

**STOP: DID YOU MAKE YOUR FLASHCARDS?**





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★ Video: Factoring Quadratics

**FACTORING IS LIKE THE “REVERSE” OF MULTIPLYING!**

$$(x + a)(x + b) = x^2 + (a + b)x + ab$$

★ Example:

a) Find the product:  $(x + 5)(x + 2)$

b) Factor:  $x^2 + 7x + 10$

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★ Example: Factor:  $x^2 + 6x - 16$

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★ Example: Factor:  $x^2 - 6x - 16$



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★ Example: Solve for  $x$  :

$$x^2 + 6x - 16 = 0$$

CHECK:



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➔ **Practice Problems: Factoring Quadratics**

Factor the following quadratics:

1.

$$x^2 + 7x + 10$$

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2.

$$x^2 + 2x - 15$$

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3.

$$x^2 + 3x + 2$$

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4.

$$x^2 - x - 20$$

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Solve the following equations. **THEY WILL HELP YOU WITH HW #9!**

5.

$$x^2 - 6x + 9 = 0$$

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6.

$$(x + 3)^2 = 0$$

Hint: Look at #5

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7.

$$x^2 - 7x - 8 = 0$$

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8.

$$x^2 - 13x + 40 = 0$$

**STOP: DID YOU MAKE YOUR FLASHCARDS?**





**BOSS LEVEL**

The width of a rectangular vegetable garden is 6 feet less than its length. If the area of the garden is 55 square feet, find the dimensions (*length and width*) of the vegetable garden.

