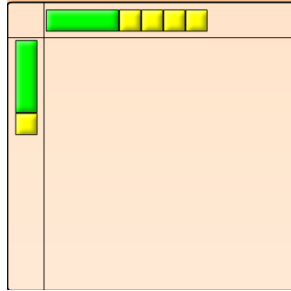


Multiplying Binomials using Algebra Tiles

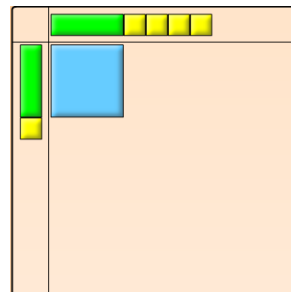
In this task, you will learn how to multiply two binomials using Algebra tiles.

1. Find the product $(x + 1)(x + 4)$.

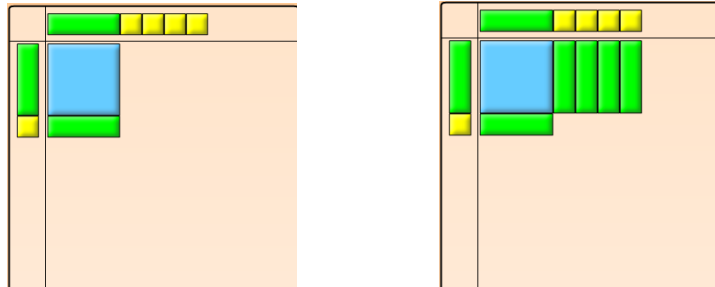
a. Build your model. Make a rectangle with a width of $x + 1$ and a length of $x + 4$.



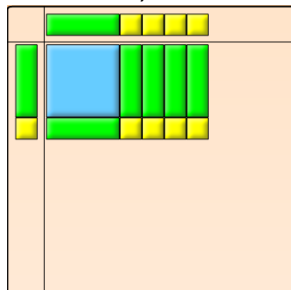
b. Fill in the area with algebra tiles. The area of an x by x is an x^2 tile.



c. Continue to fill in the area with algebra tiles, using an x tile for the area of x by 1 .



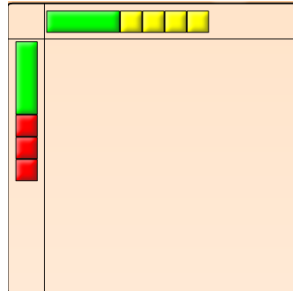
d. Fill the area of the empty space with the unit tiles, since the area of 1 by 1 is 1 .



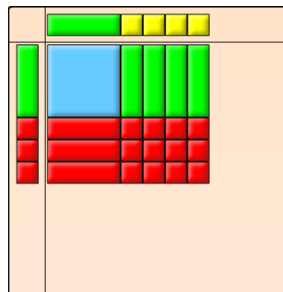
e. To find the product of $(x + 1)(x + 4)$, add all of the algebra tiled area. For this problem, there is one x^2 tile, $5x$ tiles, and 4 unit tiles. Therefore, $(x + 1)(x + 4) = x^2 + 5x + 4$.

2. Find the product $(x - 3)(x + 4)$. Since one of the binomials contains subtraction, we will need to use the negative algebra tiles to represent these values.

- a. Build your model. Make a rectangle with a width of $x - 3$ and a length of $x + 4$. The -3 units are represented using the red unit tiles.



- b. Fill in the area with algebra tiles. Keep in mind that the product of a negative and a positive is a negative value. Be sure to use the appropriate tiles.

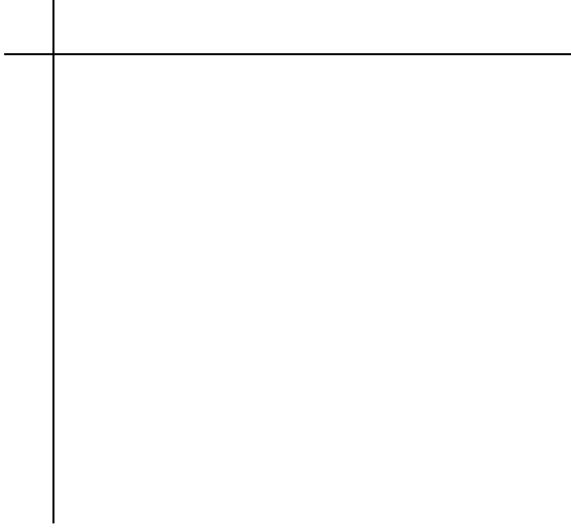


- c. Use your algebra tiles to determine the product of $(x - 3)(x + 4)$. (*Hint: If your answer is not a trinomial, can you do anything to simplify your polynomial?*)

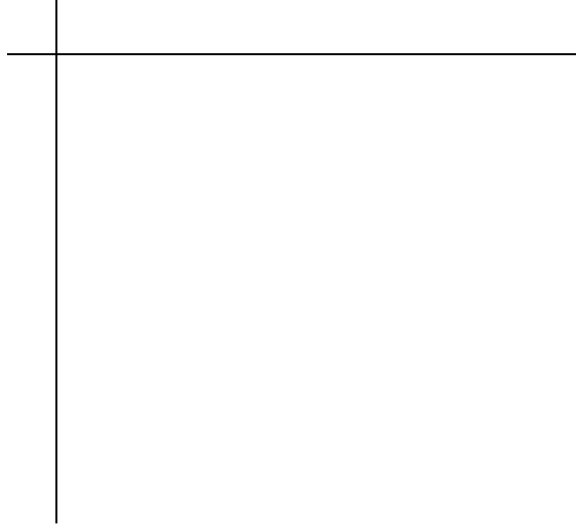
- d. How do the algebra tile models in problem #1 and problem #2 differ?

Practice: Use algebra tiles to find each of the following products.

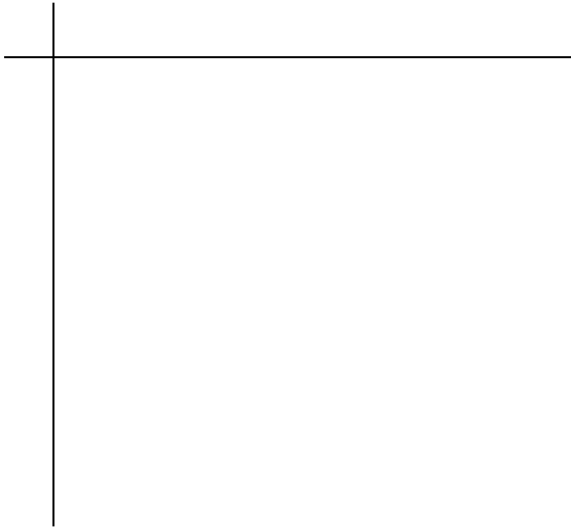
1. $(x + 2)(x + 3)$



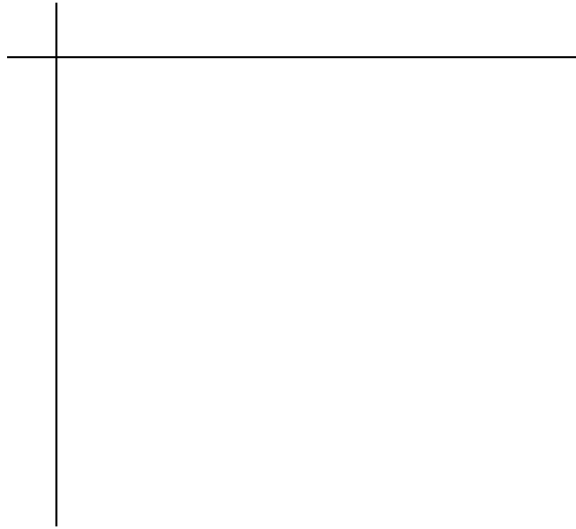
2. $(x + 4)(x - 3)$



3. $(x - 3)^2$



4. $(2x - 3)(x - 2)$



5. Hector noticed that instead of using algebra tiles, he can just draw an area model to multiply binomials. Do you think this method will work? Explain why or why not.

	x	$+ 8$
x	x^2	$8x$
$+5$	$5x$	40