

8C Multiplying Functions

SHOW YOUR WORK AND WORK IN PENCIL

Name: _____ Per: _____

1. Choose any method to multiply the following.

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

b. $(x + 3)(x + 7)$

c. $(x + 2)(x + 6)$

2. Given the two lines $g(x) = x - 3$ and $p(x) = -2x + 4$, give the following information:

a. $g(x)$ slope: _____ y-intercept: _____ x-intercept: _____ $g(1) =$ _____ Find x if $g(x) = 7$ _____

b. $p(x)$ slope: _____ y-intercept: _____ x-intercept: _____ $p(1) =$ _____ Find x if $p(x) = 6$ _____

c. Complete the table for the four functions.

x	$g(x)$	$p(x)$	$g(x) + p(x)$	$g(x)p(x)$
-1				
0				
1				
2				
3				

d. $g(x) + p(x)$ slope: _____ y-intercept: _____ Equation for $g(x) + p(x)$ _____

e. Graph and label the three lines of $g(x)$, $p(x)$, and $g(x) + p(x)$. Use different colors if needed.

f. Circle $p(1)$ your table and graph. Show how to find with the equations. _____

g. Circle $g(1)$ in your table and graph. Show how to find with the equations. _____

h. Find $g(1) + p(1)$ _____. Circle in table and on graph.

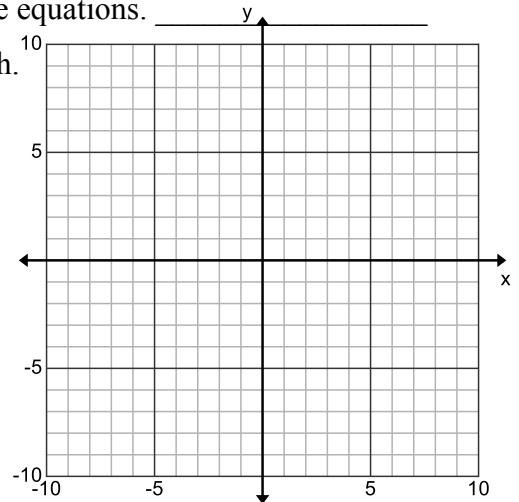
i. Plot the points of $g(x)p(x)$ from your table.

j. List the y-intercept(s) of $g(x)p(x)$ (if any) _____

k. List the x-intercept(s) for $g(x)p(x)$ (if any) _____

l. When we add two functions that are lines, the result of the graph is a _____

m. When we multiply two functions that are lines, the shape of the graph is called a _____.



3. Given the equations $f(x) = x + 10$ and $d(x) = 2x - 5$

a. $f(1) + d(2)$ _____

b. $f(-2) - d(3)$ _____

c. Find, $f(x) + d(x)$ _____

d. Find, $f(x) - d(x)$ _____

e. Show the factors to multiply $f(x)d(x)$:

f. Multiply $f(x)d(x)$: _____

g. Show the factors to divide $f(x)/d(x)$ _____

EC Find $f(d(x))$ _____

4. Using the equations $f(x) = x + 6$ and $g(x) = x + 4$, find the following.

a. $2f(x) =$ _____

d. $f(x) + g(x) =$ _____

b. $f(2x) =$ _____

e. $f(x) - g(x) =$ _____

c. $f(x) + 2 =$ _____

f. $2f(x) + g(x) =$ _____

E.C. $f(x + 2) =$ _____

g. $3f(x) + 2g(x) =$ _____

h. Write the expression for $\frac{f(x)}{g(x)} =$ _____ (DO NOT SIMPLIFY)

i. Show the factors to multiply for $f(x)g(x) =$ _____ Multiply: _____

5. Multiply the following using any method.

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

b. $(x - 1)(2x + 5)$

Write the equations for the following.

6. $f(x) = 2x - 4$ and $g(x) = 3x + 1$

a. Show the factors for $f(x)g(x)$

b. Multiply $f(x)g(x)$

c. Write the equation for $f(x)/g(x)$

7. $f(x) = x - 1$ and $g(x) = -2x + 5$

a. Show the factors for $f(x)g(x)$

b. Multiply $f(x)g(x)$

c. Write the equation for $f(x)/g(x)$

Draw the **area model** of each rectangle to find the total.

8. $(x + 3)(x + 3)$

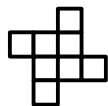
9. $(x + 6)(x + 3)$

10. $(x + 7)(x + 2)$

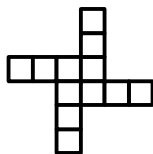
11. Make a 4-column table of this pattern starting at 2. Then write an equation that can be used to find the number of blocks (n) in any stage (s) of the following pattern?



Stage 2



Stage 3



Stage 4

