

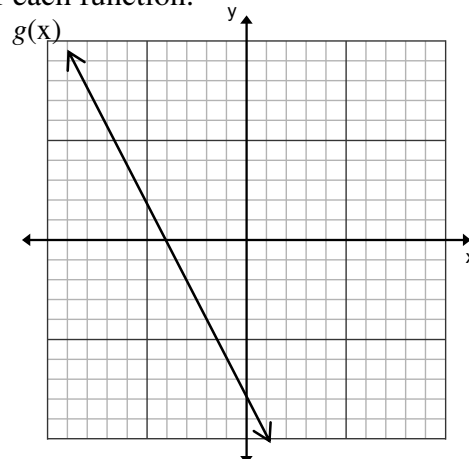
# 8R Function Operation Review

SHOW YOUR WORK AND WORK IN PENCIL.

Name: \_\_\_\_\_ Per: \_\_\_\_\_

1. For each of the following functions, **complete the table and graph** for each function.

$x$	$f(x)$	$g(x)$	$f(x) + g(x)$
-3	3		
-2	6		
0	12		
4	24		
7	33		



$f(-3) + g(4) = \underline{\hspace{2cm}}$	$f(0) + g(7) = \underline{\hspace{2cm}}$
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- |  |   |   |
|--|---|---|
| <p>a. For <math>f(x)</math>, list the following</p> <p>Equation: _____</p> <p>Vertical stretch: _____</p> <p>Vertical shift: _____</p> <p>Factor out slope: _____</p> <p>Horizontal shift: _____</p> | <p>b. For <math>g(x)</math>, list the following</p> <p>Equation: _____</p> <p>Vertical stretch: _____</p> <p>Vertical shift: _____</p> <p>Factor out <math>m</math>: _____</p> <p>Horizontal shift: _____</p> | <p>c. For <math>f(x) + g(x)</math>:</p> <p>Equation: _____</p> <p>Vertical stretch: _____</p> <p>Vertical shift: _____</p> <p>Factored form: _____</p> <p>Horizontal shift: _____</p> |
|--|---|---|

2. If  $f(x) = 2x - 12$  and  $g(x) = 3x + 15$ .

- Complete the table
- Write the equation  $f(x) + g(x) =$   
\_\_\_\_\_
- Write the equation for  $f(x) - g(x) =$   
\_\_\_\_\_
- $f(-1) - g(0) =$  \_\_\_\_\_
- $f(9) - g(-4) =$  \_\_\_\_\_

$x$	$f(x)$	$g(x)$	$f(x) + g(x)$	$f(x) - g(x)$
-4				
-1				
0				
5				
9				

3. Multiply the following binomials.

a.  $(x + 3)(2x + 7)$

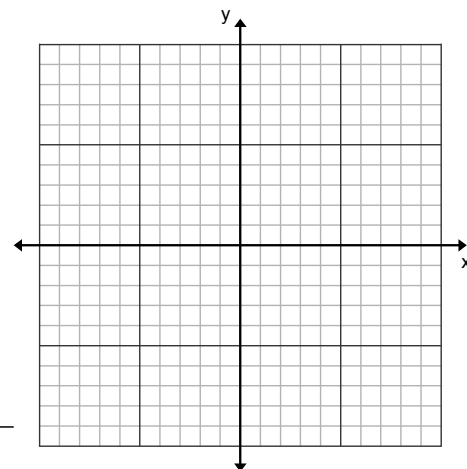
c.  $(x + 3)(x - 3)$

b.  $(x - 4)(x - 5)$

d.  $(-2x + 2)(x + 6)$

4. If  $f(x) = x + 2$  and  $g(x) = 3x - 9$
- Complete the table.
  - Graph and label each function.
  - What is  $f(2)g(-1)$   
\_\_\_\_\_
  - Set up the expression for  $f(x)g(x)$  \_\_\_\_\_
  - Find the y-intercepts for  $f(x)$ : \_\_\_\_\_  $g(x)$ : \_\_\_\_\_  $f(x)g(x)$ : \_\_\_\_\_
  - Find the x-intercepts for  $f(x)$ : \_\_\_\_\_  $g(x)$ : \_\_\_\_\_  $f(x)g(x)$ : \_\_\_\_\_
  - Multiply and find the equation for  $f(x)g(x)$ .

x	f(x)	g(x)	f(x)g(x)
-3			
-2			
-1			
0			
1			
2			
3			



5. Perform the following operations given  $r(x) = -2x - 10$  and  $s(x) = -x + 5$ :

- $r(x) + s(x)$ : \_\_\_\_\_
- $r(x) - s(x)$ : \_\_\_\_\_
- $s(x) - r(x)$ : \_\_\_\_\_
- $r(3)s(2)$ : \_\_\_\_\_
- $r(3)s(0)$ : \_\_\_\_\_
- $r(3)/s(0)$ : \_\_\_\_\_
- $r(x)s(x)$ : \_\_\_\_\_
- $s(x)r(x)$ : \_\_\_\_\_

EC: find  $s(r(x))$ : \_\_\_\_\_

- What kind of function is the result of adding two lines together? \_\_\_\_\_
- What kind of function is the result of subtracting one line from another: \_\_\_\_\_
- What kind of function is the result of multiplying two lines together: \_\_\_\_\_

1. Use the two equations ( $r$  and  $s$ ) above to fill in the table to the right.

x	r(x)	s(x)	r(x) + s(x)	r(x) - s(x)	r(x)s(x)
-3					
-1					
2					
3					

6. Using the function  $f(x) = x + 1$ , write the new equation. Describe how the graph would change.

- $2f(x)$  \_\_\_\_\_
- $f(2x)$  \_\_\_\_\_
- $f(x) + 2$  \_\_\_\_\_
- $f(x) - 2$  \_\_\_\_\_
- $3f(x) + 2$  \_\_\_\_\_
- $f(x + 2)$  \_\_\_\_\_
- $f(x - 5) + 2$  \_\_\_\_\_