G___

Combining Linear Functions Notes

Name:_____

Period:_____

Addition

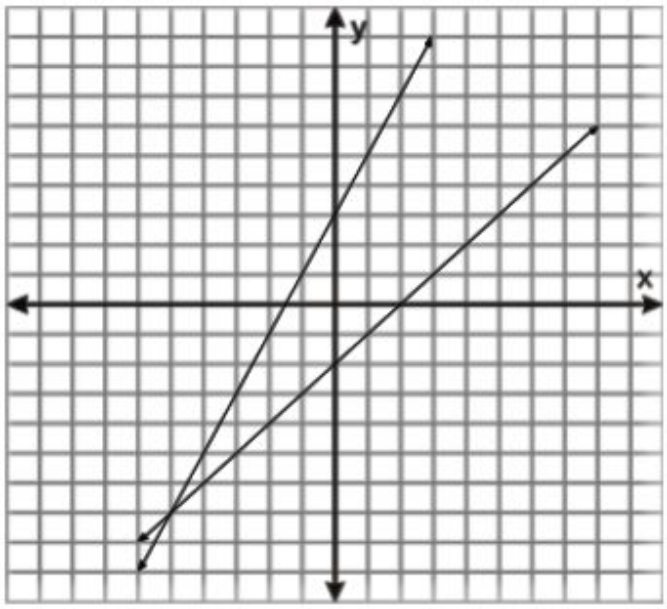
$f(x) = x - 2$ $g(x) = 2x + 3$

If I addt f(x) and g(x) to get h(x) I predict the graph of h(x) will be:

Add: $h(x) = f(x) + g(x)$

$h(x) =$

Graph $h(x)$ below



When you add two linear equations together, the outcome is:

Fill in the rest of the table.

x	$f(x)$	$g(x)$	$h(x)$
-2	-4	-1	-5
-1	-3	1	-2
0			
1			
2			

What do you notice?

Subtraction

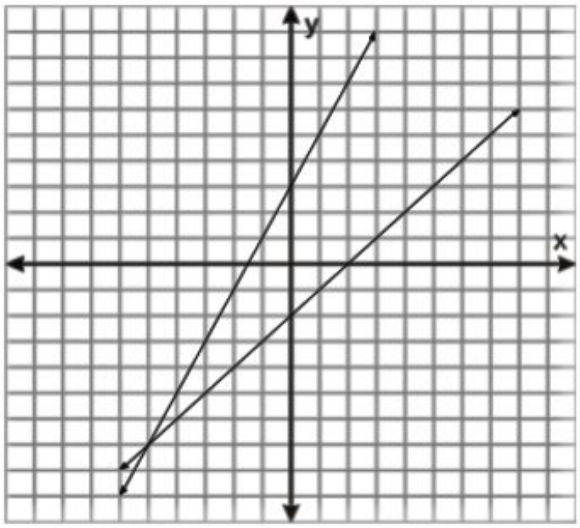
Subtract: $h(x) = f(x) - g(x)$

$f(x) = x - 2$ $g(x) = 2x + 3$

If I subtract f(x) and g(x) to get h(x) I predict the graph of h(x) will be:

$h(x) =$

Graph $h(x)$ below



When you subtract two linear equations, the outcome is:

Fill in the rest of the table. What do you notice?

x	$f(x)$	$g(x)$	$h(x)$
-2	-4	-1	-3
-1	-3	1	-4
0			
1			
2			

Multiplication

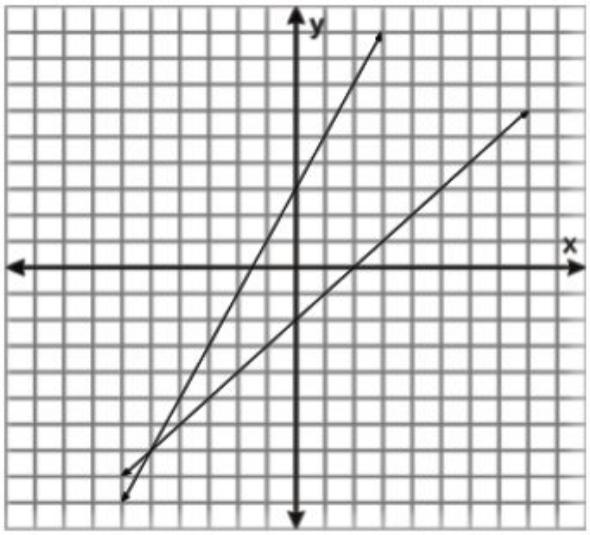
$f(x) = x - 2$ $g(x) = 2x + 3$

If I multiply f(x) and g(x) to get h(x), I predict the graph of $h(x)$ will be:

Multiply: $h(x) = f(x) \cdot g(x)$

$h(x) =$

Graph $h(x)$ below



When you multiply two linear equations together, the outcome is:

Fill in the rest of the table. What do you notice?

x	$f(x)$	$g(x)$	$h(x)$
-2	-4	-1	4
-1	-3	1	-3
0			
1			
2			

Division

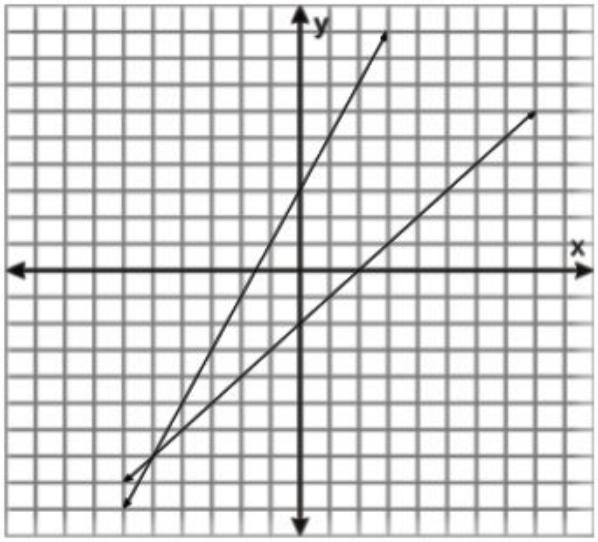
$f(x) = x - 2$ $g(x) = 2x + 3$

Divide: $h(x) = f(x) \div g(x)$

If I divide f(x) and g(x) to get h(x), I predict the graph of $h(x)$ will be:

$h(x) =$

Graph $h(x)$ below



When you divide one linear equation by another, the outcome is:

Fill in the table.

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

What do you notice?

#53 Answer the questions below for the sum, difference, product, and quotient of your functions from problem

a. Is the new function a polynomial function? If it is, what is its degree? If it is not, explain why not.

Addition:	Subtraction:
Multiplication:	Division:
b. Can your results from part (a) be generalized to apply to any two linear functions? That is, will the sum, difference, product, and/or quotient of any two linear functions always be the same type of function?	