

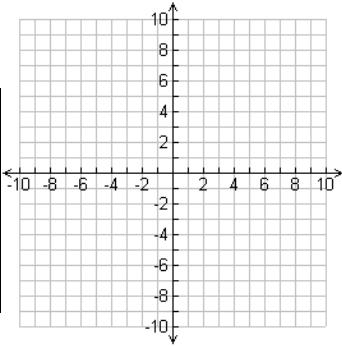
Name: \_\_\_\_\_

### Graphing Linear Functions – Looking for Patterns

For each equation, complete the table and use it to draw the graph.

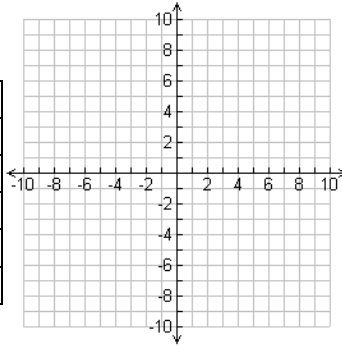
1)  $y = 2x$

x	y
-2	
-1	
0	
1	
2	



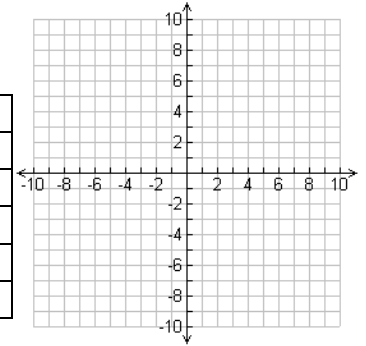
2)  $y = 4x$

x	y
-2	
-1	
0	
1	
2	



3)  $y = \frac{5}{2}x$

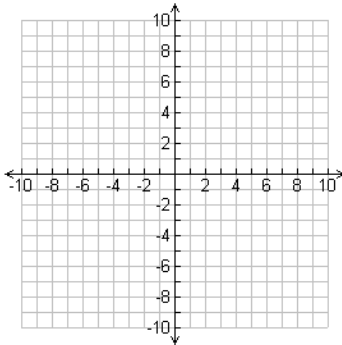
x	y
-4	
-2	
0	
2	
4	



4) Compare the graphs for #1 and #2. How are they different? Looking at the equation, why do you think this happened?

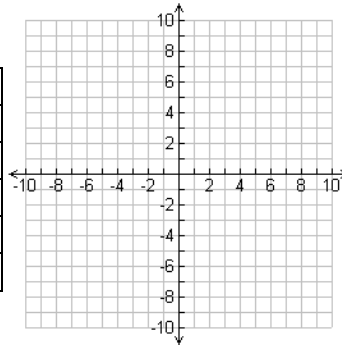
5)  $y = x$

x	y
0	
1	
2	
3	
4	
5	



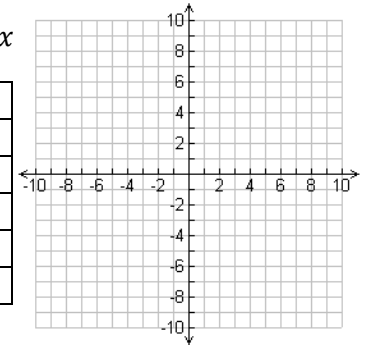
6)  $y = -3x$

x	y
-2	
-1	
0	
1	
2	



7)  $y = -\frac{3}{4}x$

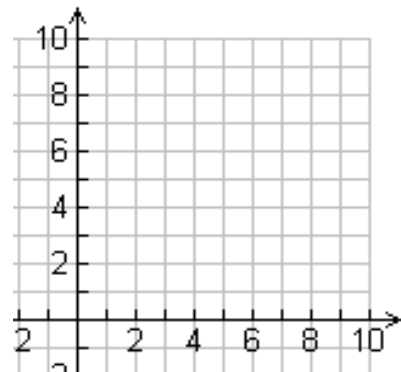
x	y
-8	
-4	
0	
4	
8	



8) The equations in #6 and #7 both have a negative coefficient of x. How did this affect their graphs?

9)  $y = \frac{1}{3}x$  (Leave your answers as fractions/mixed #s!)

x	y
0	
1	
2	
3	
4	
5	
6	
9	



10) a) Go back up to #3. Use the slope triangle method to find the slope of the graph you made. What do you notice?

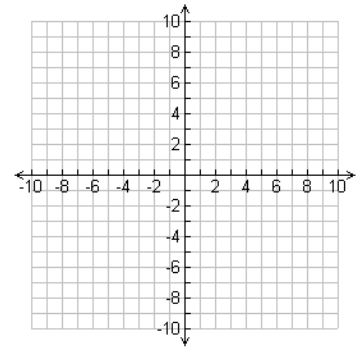
\*\*\*DO THESE THREE only if you remember this from last year!!!\*\*\*

b) Find the slope of the graphs from #1, #6, and #9. Did the same thing happen?

c) What does this mean? Explain in your own words.

- 11) a) Complete the table and graph  $y = \frac{1}{2}x$  using the graph to the right.

<b>x</b>	0	2	4	6	8
<b>y</b>					



- b) PREDICT: What do you think the graph of  $y = \frac{1}{2}x + 3$  will look like?  
Describe in words.

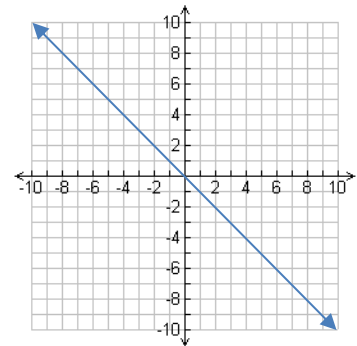
- c) Complete the table for  $y = \frac{1}{2}x + 3$ , then graph the equation on the same graph.

<b>x</b>	0	2	4	6	8
<b>y</b>					

- d) How is the new graph similar and different than the original graph? Is this what you expected?

- e) Predict: What do you think the graph of  $y = \frac{1}{2}x - 5$  would look like? Describe in words.

- 12) The graph of  $y = -x$  is shown. On the same graph, without filling out a table, draw a prediction for what you think the graph of  $y = -x + 4$  would look like.



- 13) The most common way to write a linear equation (a “straight line” equation) is:

$$y = \boxed{\text{any number}} x + \boxed{\text{any number}}$$

- a) How does the number in the first box affect the graph? What if it’s negative? Positive? A large number? A small number?

- b) How does the number in the second box affect the graph? What happens when you make this number bigger or smaller?