

**GRADE 11 ESSENTIAL  
GRAPH LINES  
WORKSHEET PRACTICE**

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

1. Graph the lines given the equation ('recipe' for y given x)

a.  $y = 3x + 2$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{3}{1}$$

for every 1 you run right, you rise 3  
but you start at 2 head start

$x$	$3x + 2$	$y$
-1		
0		
1		

You do a couple  $x$ 's and calculate the  $y$

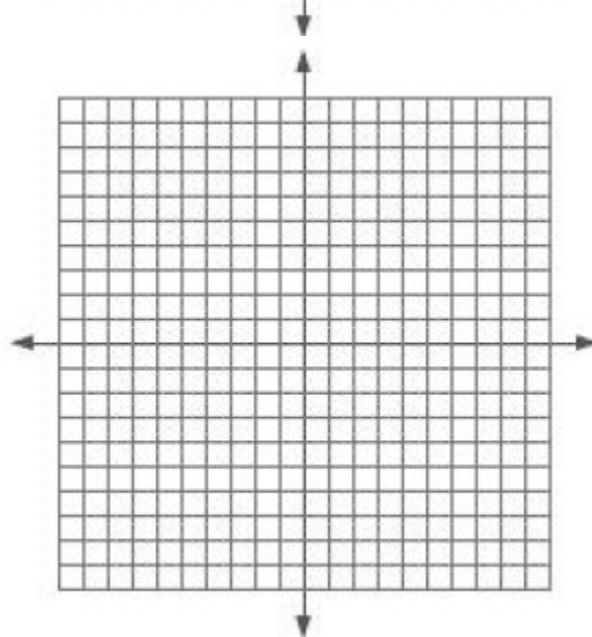
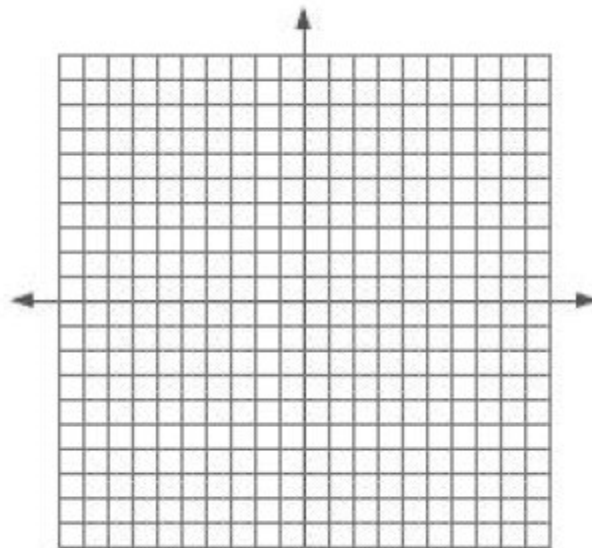
b.  $y = -2x + 5$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{-2}{1}$$

for every 1 you increase the  $x$ , you  
**drop** the  $y$  by 2 but you start at 5

$x$	$-2x + 5$	$y$
-1		
0		
1		

You do a couple  $x$ 's and calculate the  $y$



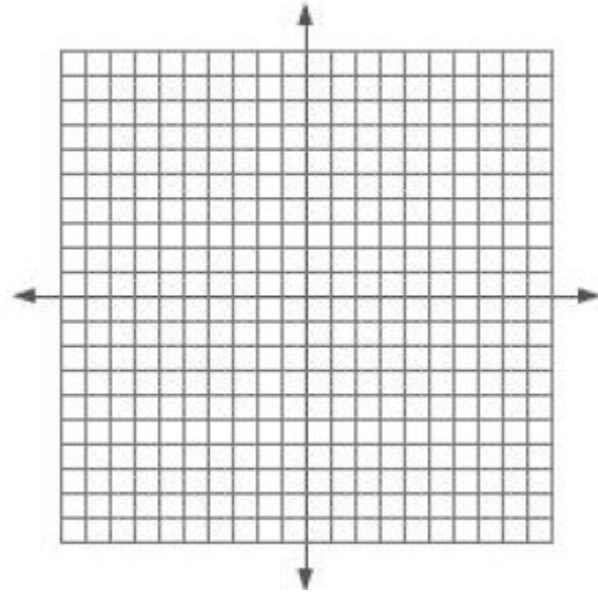
c.  $y = \frac{3}{4}x + 2$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{3}{4}$$

for every +4 you change the x, you change the y by +3

$x$	$\frac{3}{4}x + 2$	$y$
-1		
0		
1		
4		

You do a couple x's and calculate the y



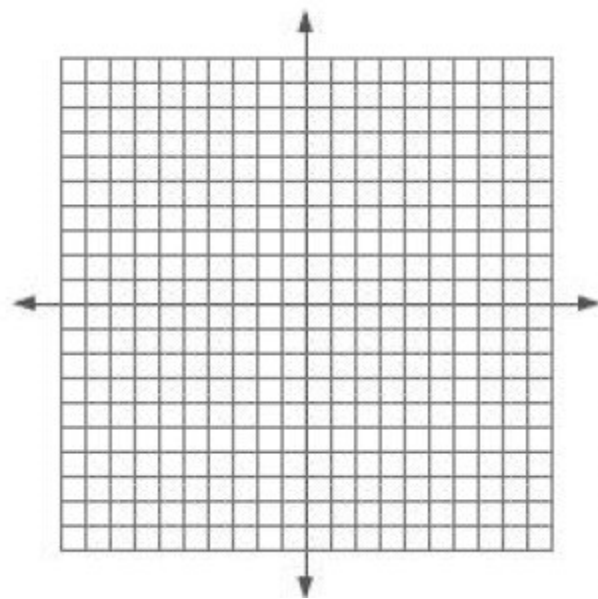
d.  $y = -\frac{3}{5}x + 7$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{-3}{5}$$

for every 5 increase in x, the y decreases by 3.

$x$	$-\frac{3}{5}(x) + 7$	$y$
-1		
0		
1		
5		

You do a couple x's and calculate the y



e.  $y = 7$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{\text{---?}}{\text{---?}}$$

for every \_\_\_? you run right, you rise \_\_\_?

$x$	$y$
-4	
-1	
0	
1	
+6	

You do a couple  $x$ 's and calculate the  $y$

Horizontal Line

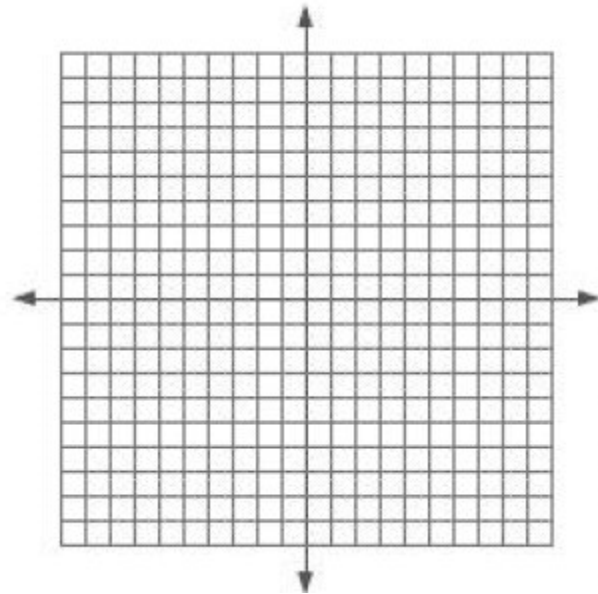
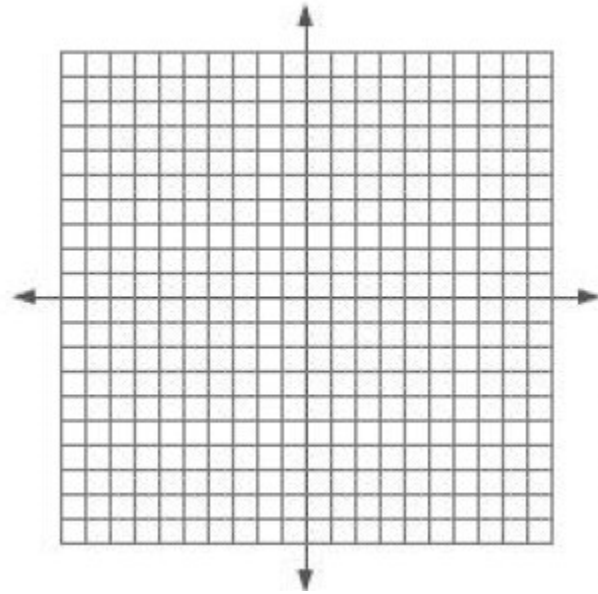
f.  $y = -2(x) + 7$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{\text{---?}}{\text{---?}}$$

for every \_\_\_? **change** in  $x$ , the  $y$  changes by \_\_\_?

$x$	$-2*x + 7$	$y$
-1		
0		
1		
5		

You do a couple  $x$ 's and calculate the  $y$



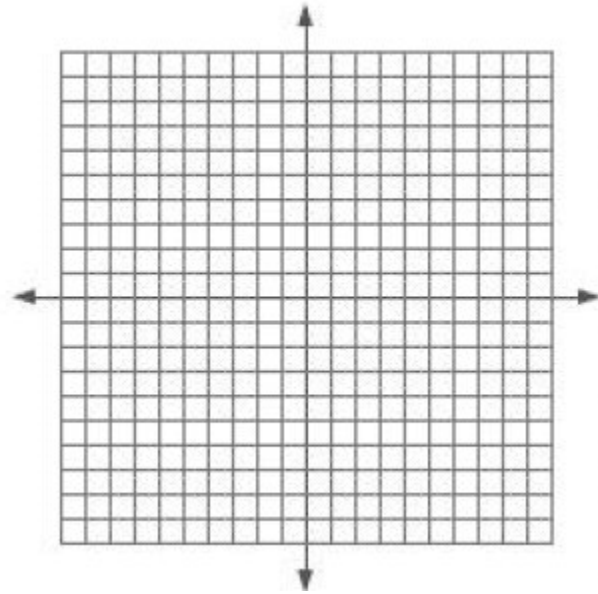
g.  $y = -\frac{2}{3}x - 4$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{\text{---?}}{\text{---?}}$$

for every \_\_\_? change in  $x$ , the  $y$  changes by \_\_\_?.

$x$	$y = -\frac{2}{3}x - 4$	$y$
-1		
0		
1		
3		

You do a couple  $x$ 's and calculate the  $y$



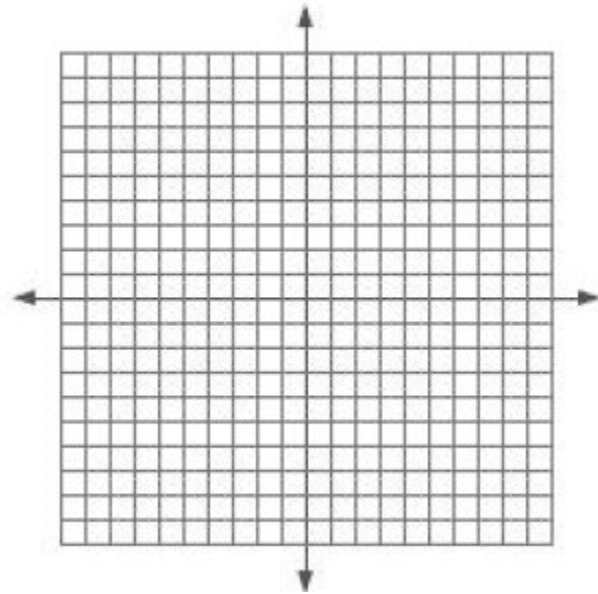
h.  $y = 2.5x - 3$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{\text{---?}}{\text{---?}}$$

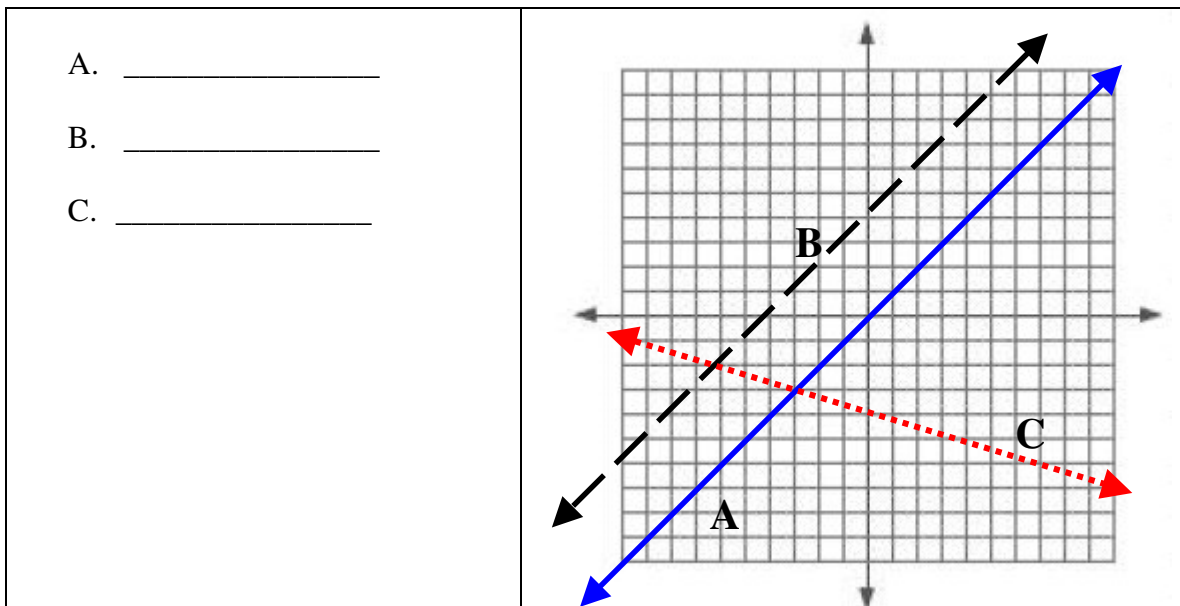
for every \_\_\_? change in  $x$ , the  $y$  changes by \_\_\_?.

$x$	$y = 2.5x - 3$	$y$
-1		
0		
1		

You do a couple  $x$ 's and calculate the  $y$



2. What is the slope of each of the labeled lines?



**Formulas**

$$\text{Slope} = m = \frac{\text{Rise}}{\text{Run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{\Delta y}{\Delta x} = \frac{(y_2 - y_1)}{(x_2 - x_1)}$$