

# Graphing Lines

Identify each of the following in the graph given:

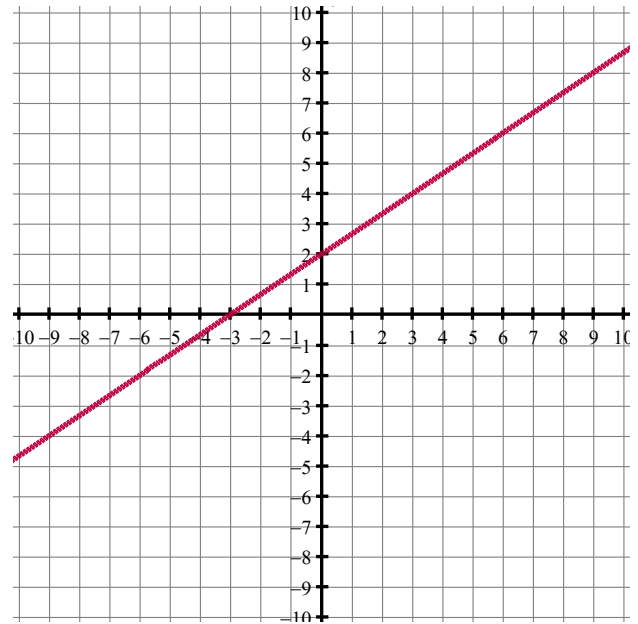
Y-Intercept: \_\_\_\_\_

X-Intercept: \_\_\_\_\_

Type of Variation: \_\_\_\_\_

Slope: \_\_\_\_\_

Equation: \_\_\_\_\_

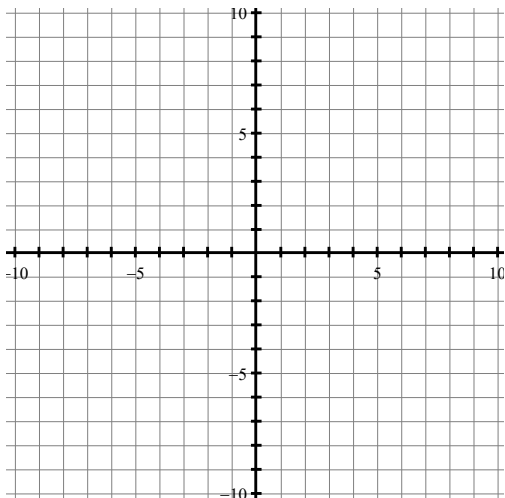


## Graphing by Table of Values

Graph each of the following lines using a table of values.

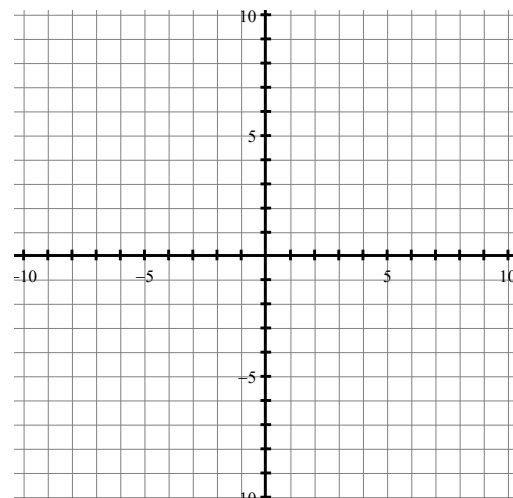
a)  $y = 3x - 4$

x	y



b)  $y = -\frac{1}{2}x + 1$

x	y



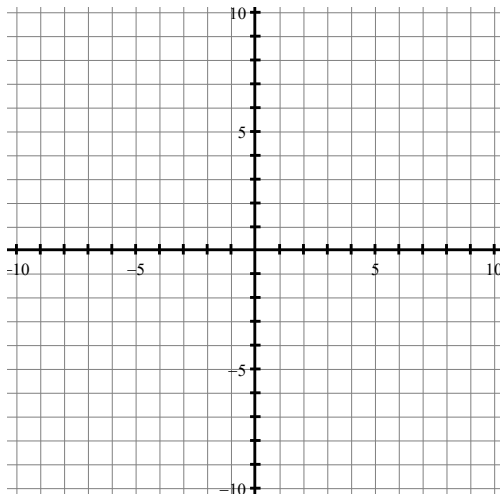
## Graphing by Slope & Y-Intercept

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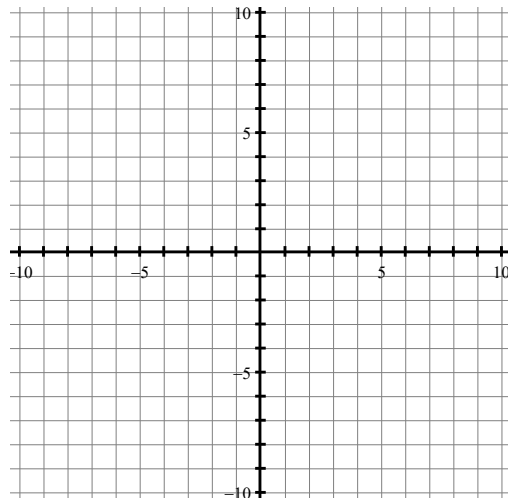
3

Graph each of the following lines using the slope and y-intercept.

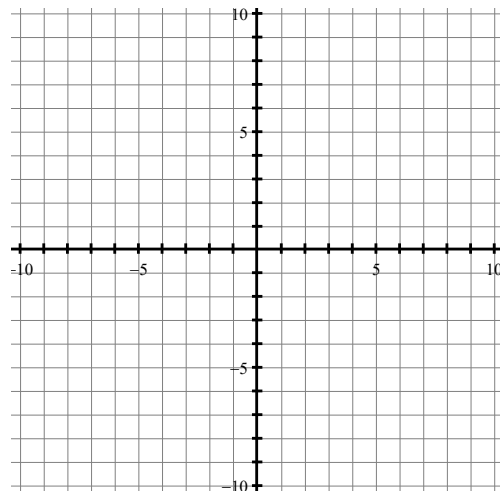
a)  $y = \frac{2}{3}x + 4$



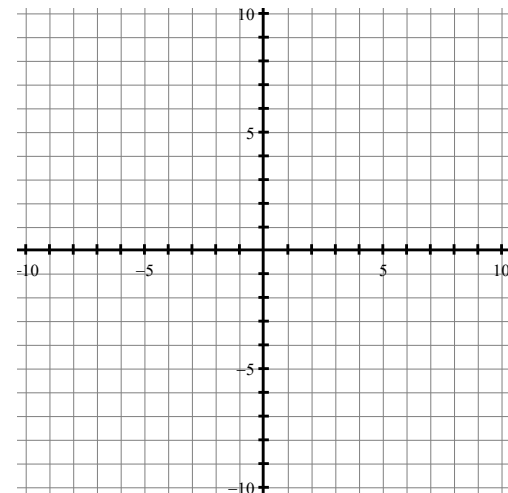
b)  $y = -\frac{5}{4}x + 7$



c)  $y = 2x - 5$



d)  $y = -x + 6$



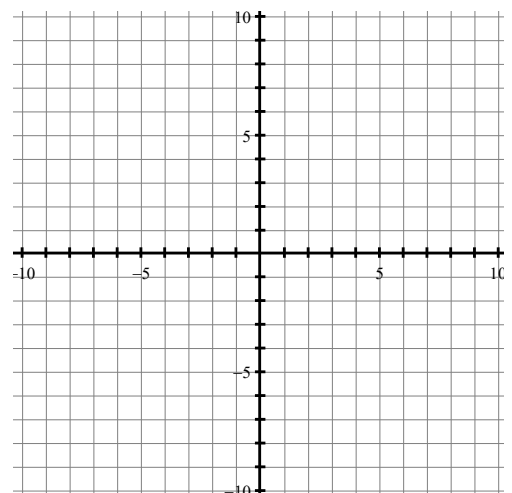
## Graphing by X-Intercept & Y-Intercept

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4

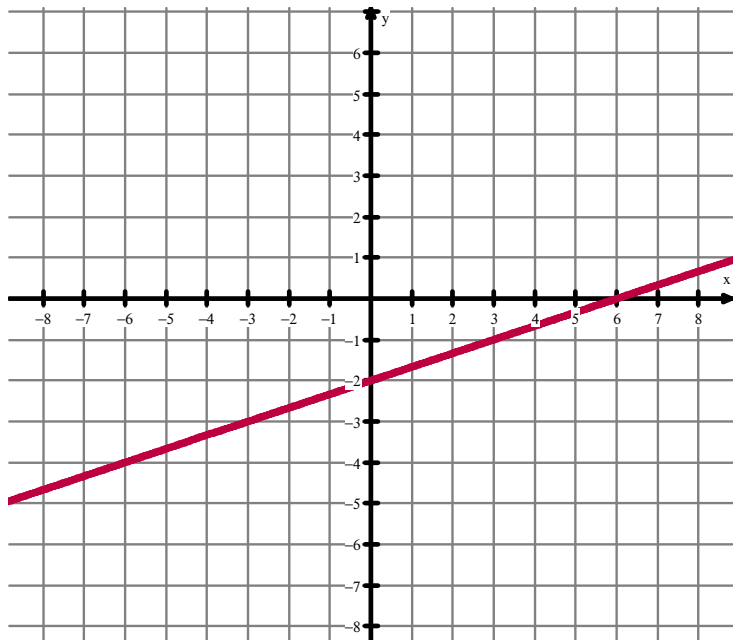
Graph the following lines using the x-intercept and y-intercept.

a)  $2x + 6y = 18$



# Graphing Equations of Lines

5



Complete the table of values:

X	Y
-6	
-3	
3	
6	

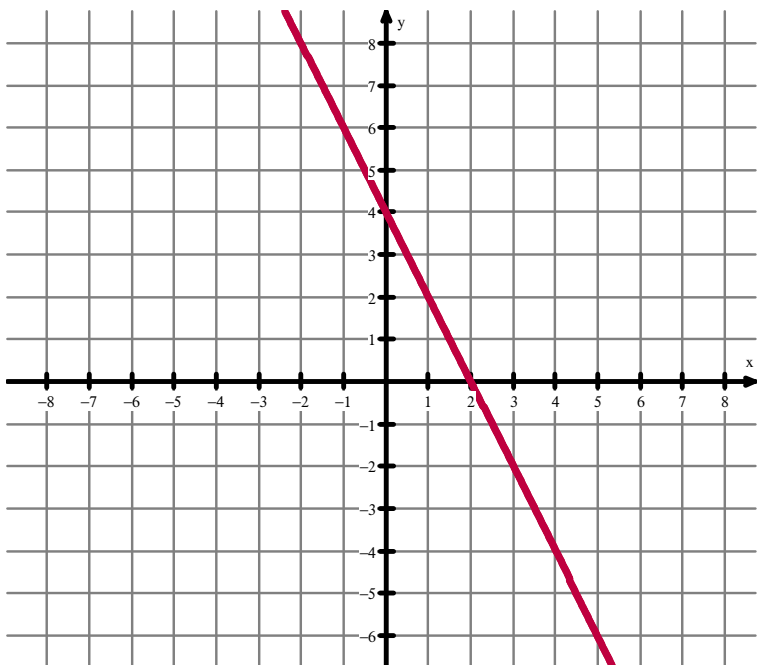
Indicate:

x-intercept: \_\_\_\_\_

y-intercept: \_\_\_\_\_

Slope: \_\_\_\_\_

6



Complete the table of values:

X	Y
-2	
-1	
1	
2	

Indicate:

x-intercept: \_\_\_\_\_

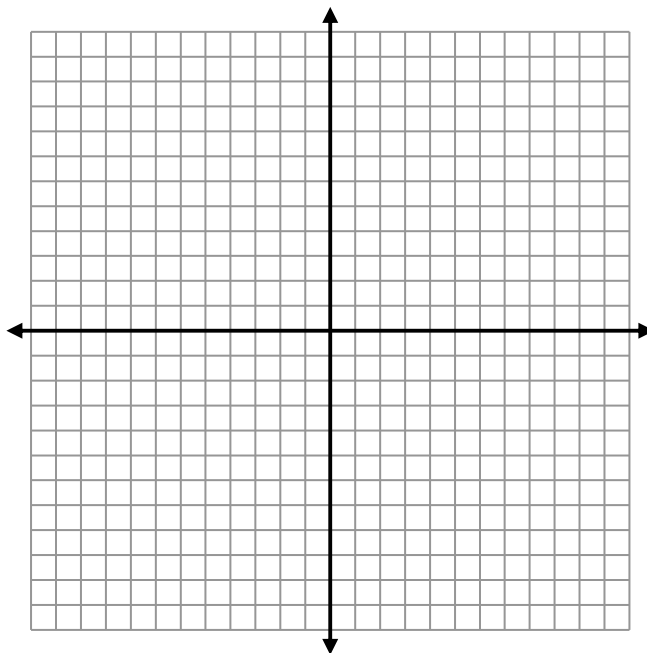
y-intercept: \_\_\_\_\_

Slope: \_\_\_\_\_

### Method #1: Table of Values

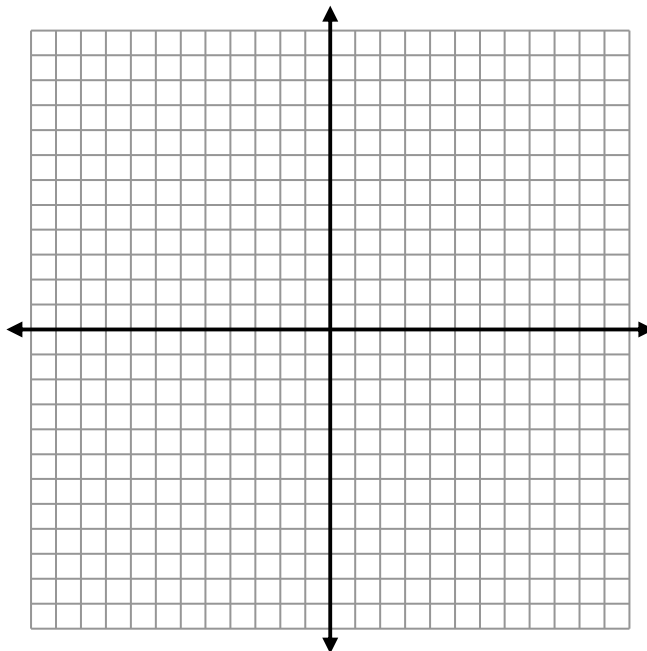
7

$$y = 3x - 4$$



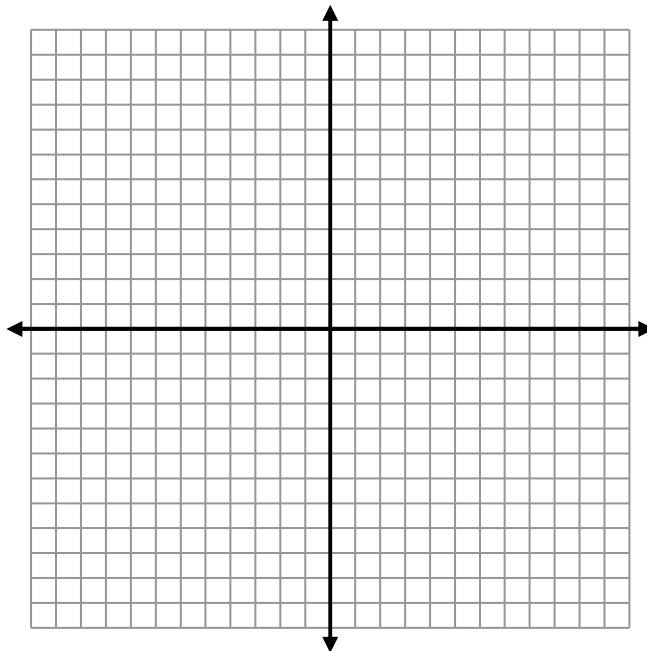
8

$$y = -\frac{1}{2}x + 6$$

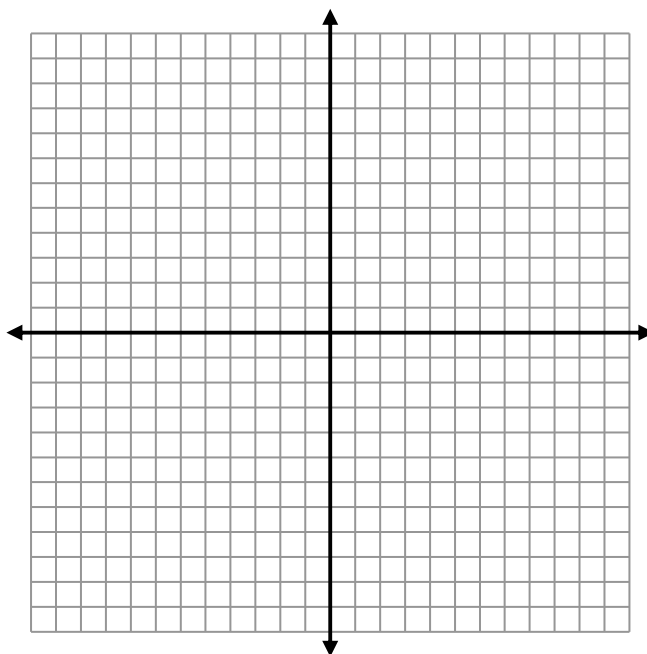


### Method #2: Using Intercepts

9  $y = 4x - 8$

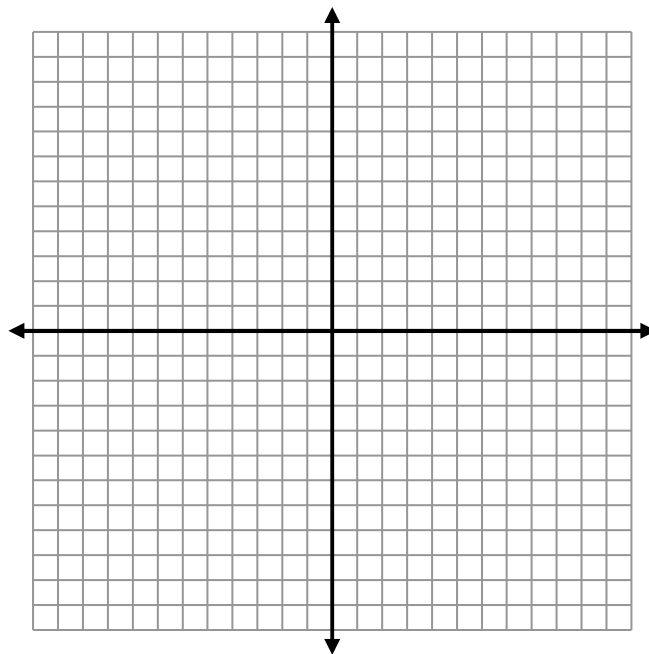


10  $y = -\frac{1}{3}x + 2$

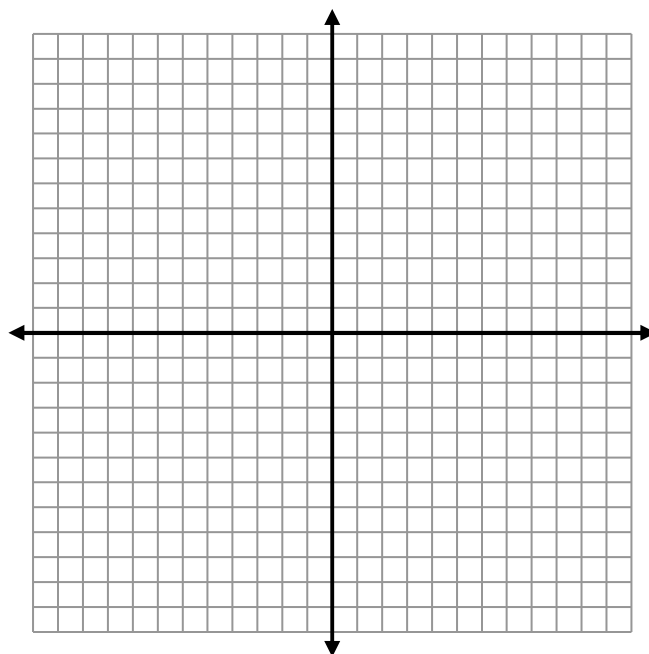


### Method #3: Slope/Y-intercept

11  $y = 5x - 3$



12  $y = -\frac{1}{2}x + 2$



# Graphing Lines

Identify each of the following in the graph given:

Y-Intercept: 2

X-Intercept: -3

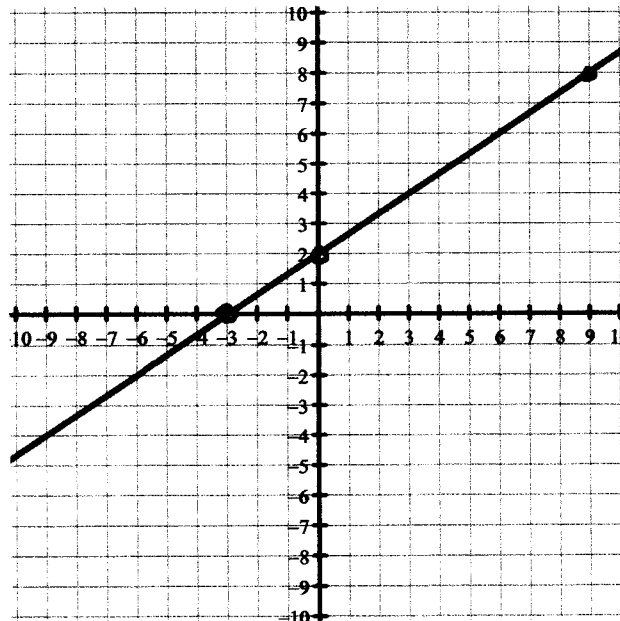
Type of Variation: Partial  
(does not start at 0)

Slope:  $\frac{2}{3}$

$$\begin{array}{c|c} x & y \\ \hline 0 & 2 \\ 9 & 8 \end{array} + 6$$

$$m = \frac{\Delta y}{\Delta x} = \frac{6}{9} = \frac{2}{3}$$

Equation:  $y = 2 + \frac{2}{3}x$   
or  
 $y = \frac{2}{3}x + 2$



## Graphing by Table of Values

Graph each of the following lines using a table of values.

a)  $y = 3x - 4$

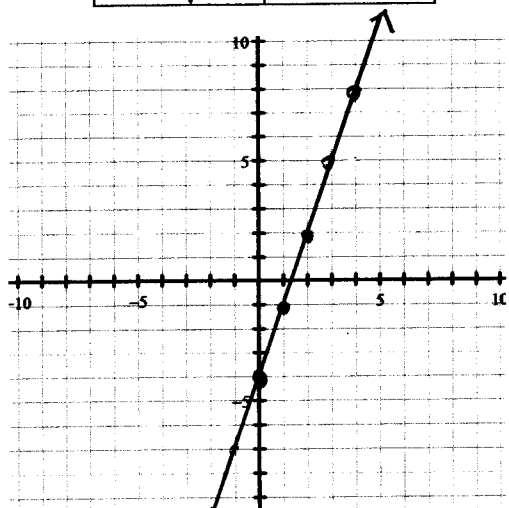
x	y
0	-4
1	-1
2	2
3	5
4	8

$$\begin{aligned} 3(0) - 4 \\ 3(1) - 4 \\ 3(2) - 4 \\ 3(3) - 4 \\ 3(4) - 4 \end{aligned}$$

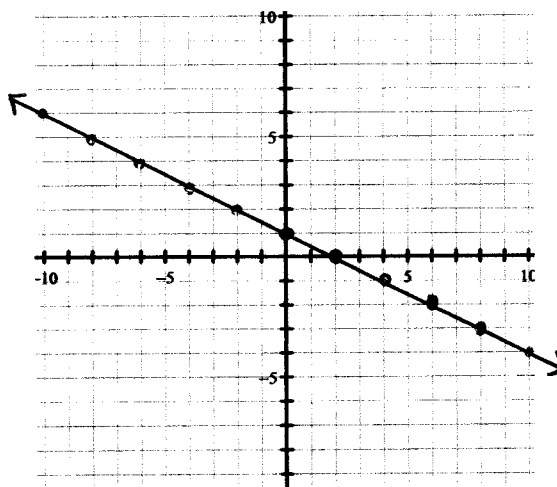
b)  $y = -\frac{1}{2}x + 1$

x	y
0	1
2	0
4	-1
6	-2
8	-3

$$\begin{aligned} \frac{1}{2}(0) + 1 \\ -\frac{1}{2}(2) + 1 = -\frac{2}{2} + 1 = -1 + 1 \\ -\frac{1}{2}(4) + 1 = -\frac{4}{2} + 1 = -2 + 1 \\ -\frac{1}{2}(6) + 1 \\ -\frac{1}{2}(8) + 1 \end{aligned}$$



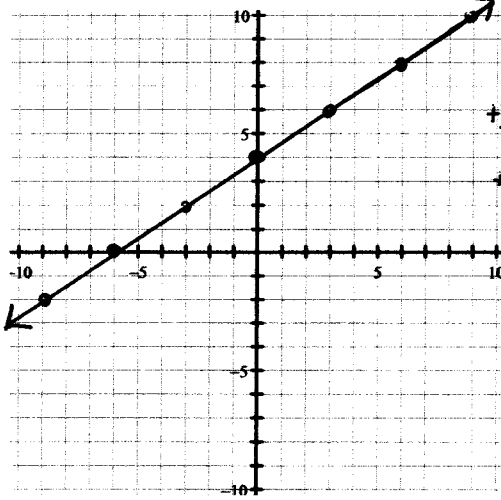
put arrows on the ends of the line.



## Graphing by Slope & Y-Intercept

3 Graph each of the following lines using the slope and y-intercept.

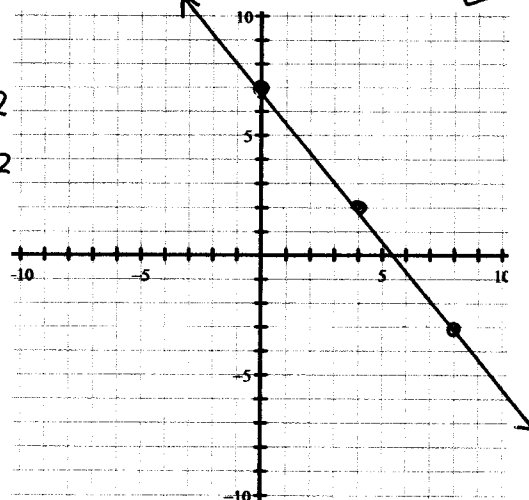
a)  $y = \frac{2}{3}x + 4$   $b=4$   $m = \frac{2}{3}$



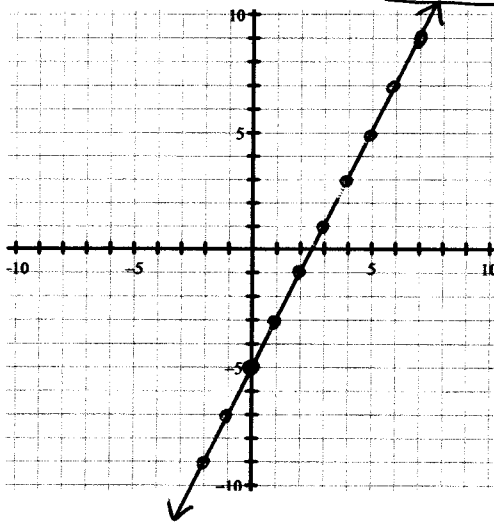
x	y
0	4
3	6
6	8

+3  
+3

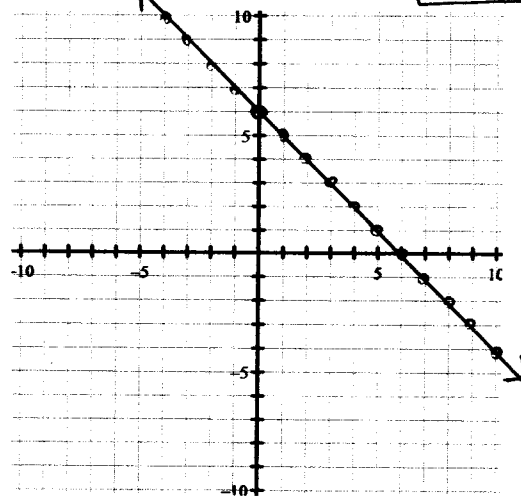
b)  $y = -\frac{5}{4}x + 7$   $b=7$   $m = -\frac{5}{4}$



c)  $y = 2x - 5$   $b=-5$   $m = \frac{2}{1}$



d)  $y = -x + 6$   $b=6$   $m = -\frac{1}{1}$



## Graphing by X-Intercept & Y-Intercept

Graph the following lines using the x-intercept and y-intercept.

a)  $2x + 6y = 18$

$\frac{x-int}{y=0}$

$\frac{y-int}{x=0}$

$2x + 6(0) = 18$

$2(0) + 6y = 18$

$2x + 0 = 18$

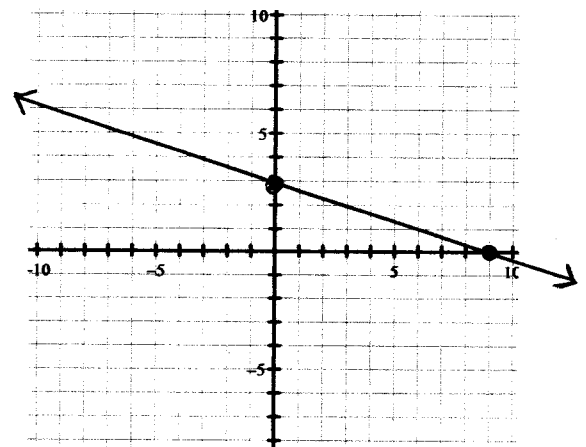
$0 + 6y = 18$

$2x \stackrel{?}{=} 18 \stackrel{?}{:} 2$

$6y \stackrel{?}{=} 18 \stackrel{?}{:} 6$

$x = 9$

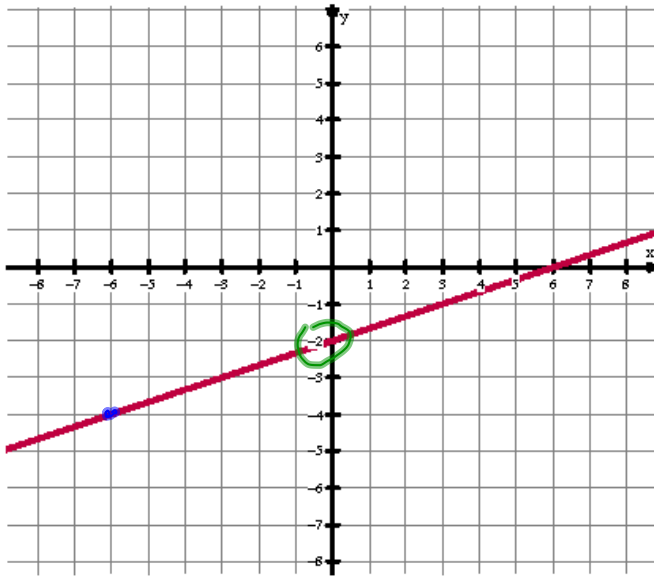
$y = 3$





# Graphs of Linear Relations

5



Complete the table of values:

X	Y
-6	-4
-3	-3
3	-1
6	0

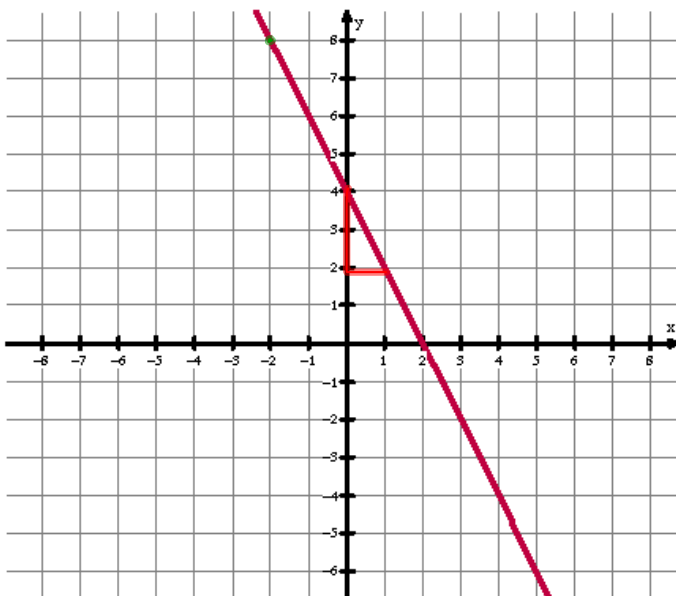
Indicate:

The x-intercept:  $(6, 0)$

The y-intercept:  $(0, -2)$

The Slope:  $m = \frac{-2}{-6} = \frac{2}{6} = \frac{1}{3}$

6



Complete the table of values:

X	Y
-2	8
-1	6
1	2
2	0

Indicate:

The x-intercept:  $(2, 0)$

The y-intercept:  $(0, 4)$

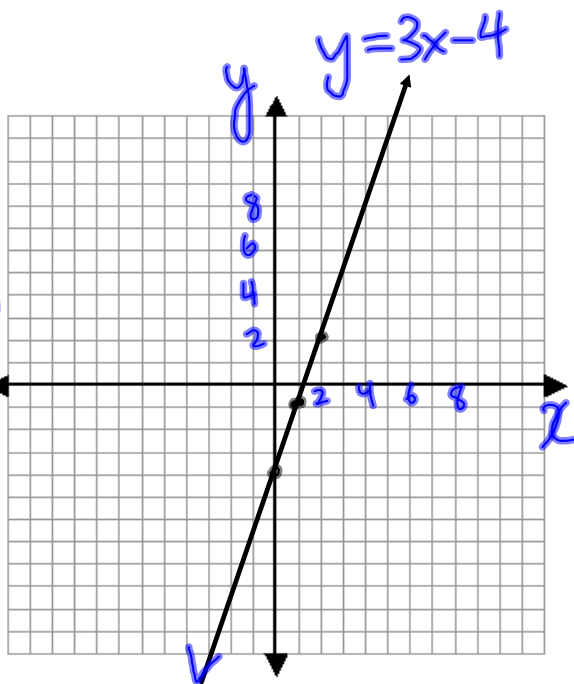
The Slope:  $m = \frac{4}{-2} = -2$

### Method #1: Table of Values

7  $y = 3x - 4$

x	y
0	-4
1	-1
2	2

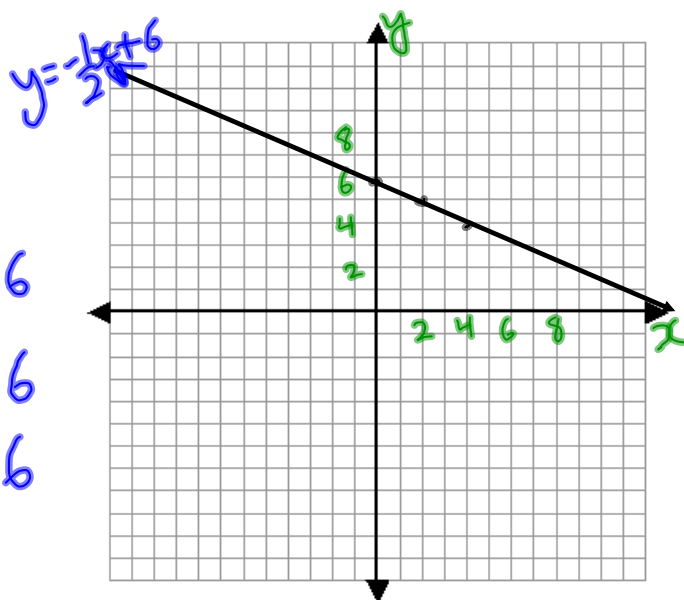
$$y = 3(0) - 4$$
$$y = 3(1) - 4 = -1$$
$$y = 3(2) - 4 = 2$$



8  $y = -\frac{1}{2}x + 6$

x	y
0	6
2	5
4	4

$$y = -\frac{1}{2}(0) + 6$$
$$y = -\frac{1}{2}(2) + 5$$
$$y = -\frac{1}{2}(4) + 4$$

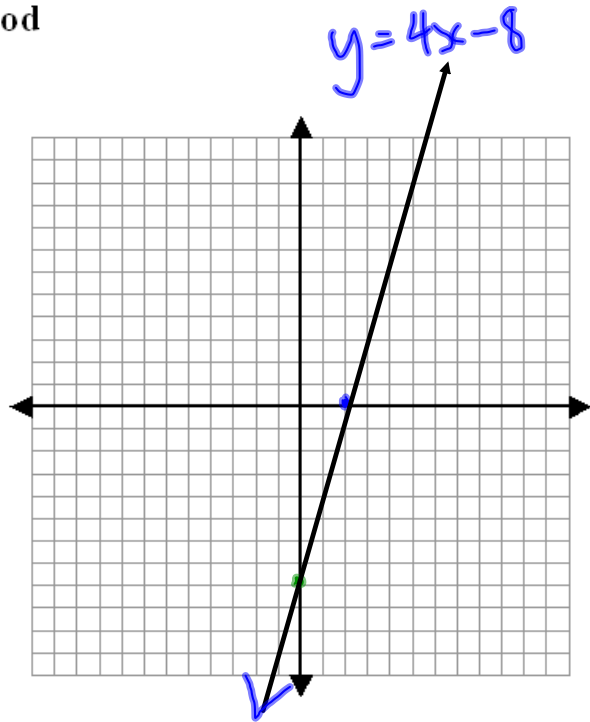


Method #2: x- and y-intercepts method

9  $y = 4x - 8$

x-int  
 let  $y = 0$   
 $y = 4x - 8$   
 $0 = 4x - 8$   
 $8 = 4x$   
 $\frac{8}{4} = \frac{4x}{4}$   
 $2 = x$

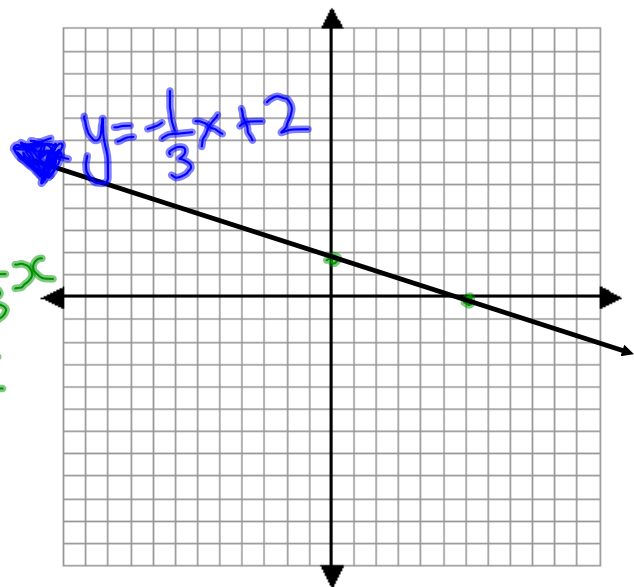
y-int  
 let  $x = 0$   
 $y = 4(0) - 8$   
 $y = -8$



10  $y = -\frac{1}{3}x + 2$   $b = 2!$

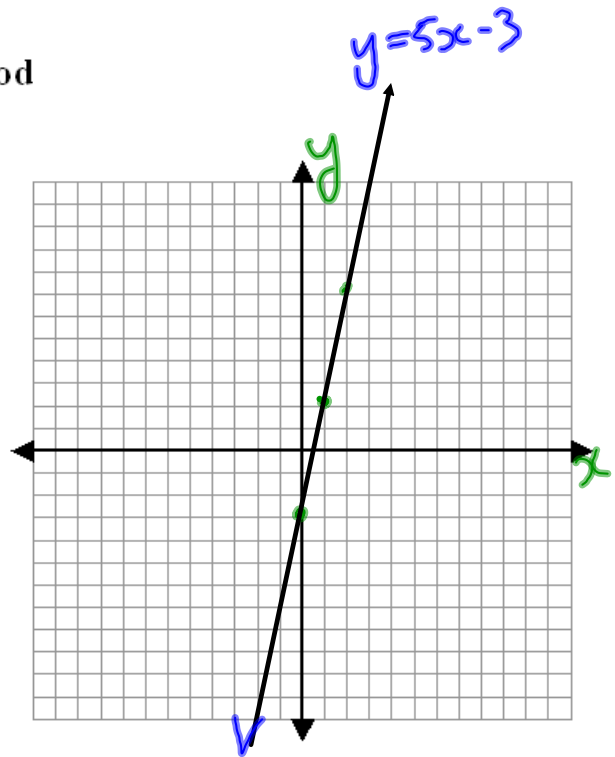
x-int  
 let  $y = 0$   
 $0 = -\frac{1}{3}x + 2$   
 $0 = -\frac{1}{3}x + \frac{6}{3}$   
 $0 = -x + 6$   
 $x = 6$   
 $-6 = -x$

$-2 = -\frac{1}{3}x$   
 $-6 = \frac{-x}{-1}$   
 $6 = x$



Method #3: Slope / y-intercept method

||  $y = 5x - 3$   
 $m = \frac{5}{1}$  ← where to go next  
 $b = -3$  ← point where you start from



|2  $y = -\frac{1}{2}x + 2$   
 $m = -\frac{1}{2}$  down 1 right 2  
 $b = 2$

