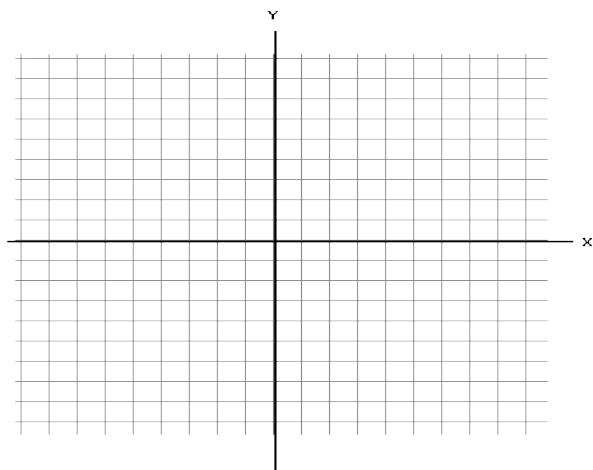


Describe what you notice if m is negative.

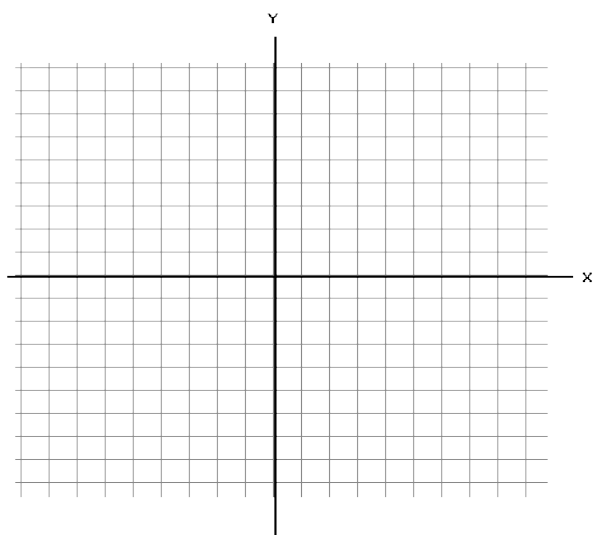
Plug It In!

$$y = x$$



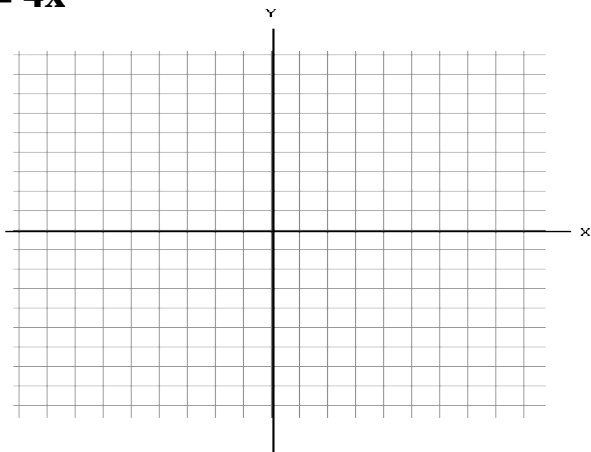
x	y
-2	
-1	
0	
1	
2	

$$y = 2x$$



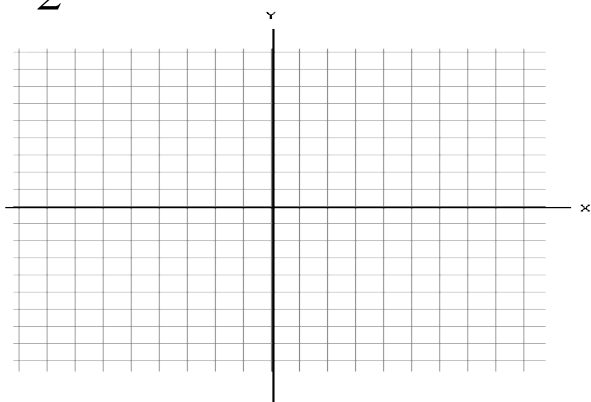
x	y
-2	
-1	
0	
1	
2	

$$y = 4x$$



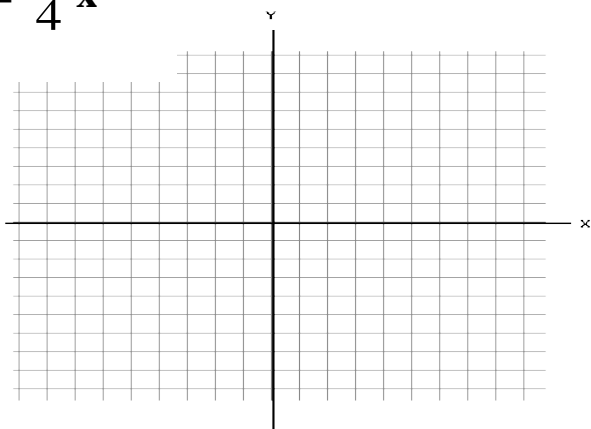
x	y
-2	
-1	
0	
1	
2	

$$y = \frac{1}{2}x$$



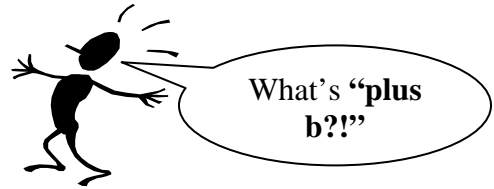
x	y
-2	
-1	
0	
1	
2	

$$y = \frac{1}{4}x$$



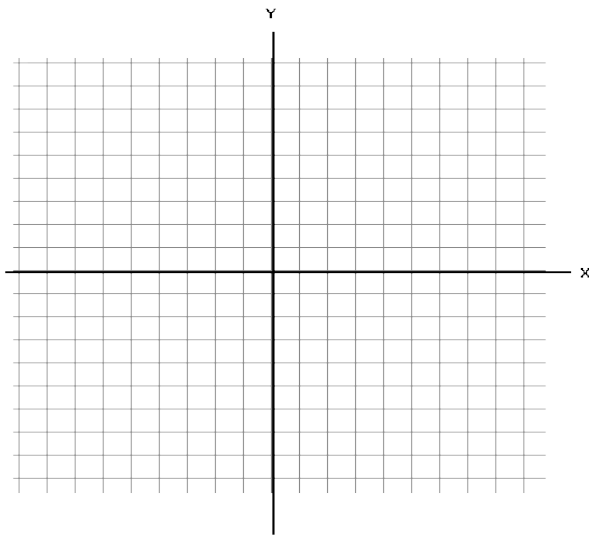
x	y
-2	
-1	
0	
1	
2	

$$y = mx + b$$



PART 2A

The “+ b” will affect the lines. Graph to find out how *b* affects the lines.



EQUATION ($y=mx + b$)	COLOR
$y_1 = x + \frac{3}{2}$	black
$y_2 = 2x + 1$	red
$y_3 = 4x + 2$	blue
$y_4 = \frac{1}{2}x + 3$	green
$y_5 = \frac{2}{3}x + 4$	orange

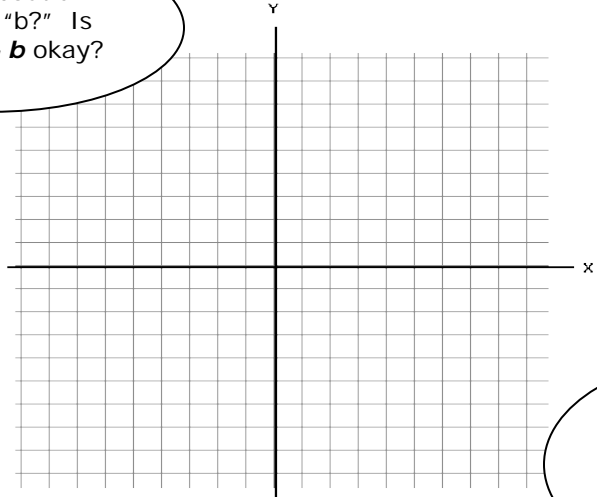
SO...What happened?

(Consider *placement* and *slope* in your answer. ☺)



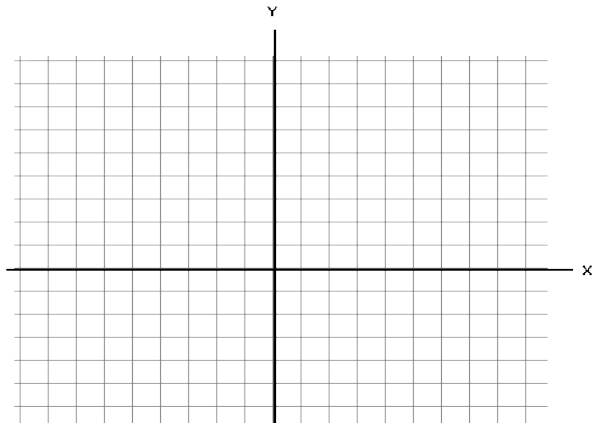
What about a negative "b?" Is $y = mx - b$ okay?

$$y = 2x - 1$$

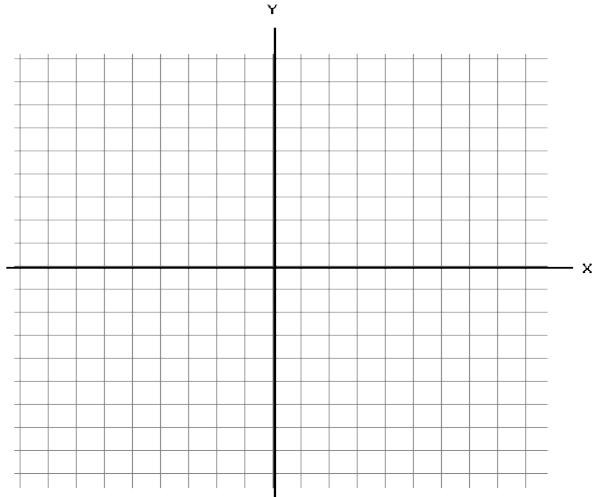


What about a **negative m** AND a **negative b**?

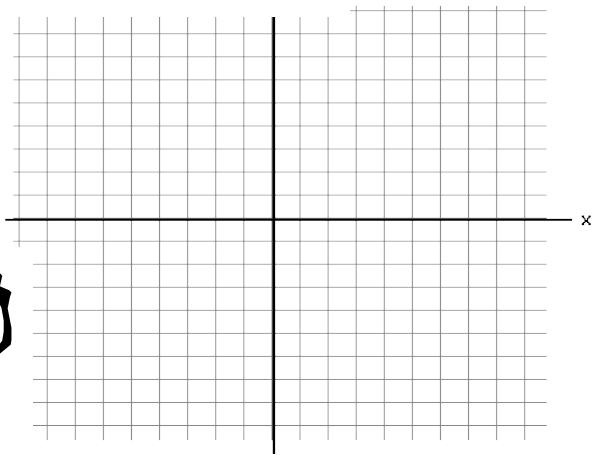
$$y = 4x - 2$$



$$y = -2x - 1$$



$$y = -x - \frac{3}{2}$$



Both $y = mx$ and $y = mx + b$ (OR $y = mx - b$) are called equations of a line.

1. Compare the two forms. Tell what is the same and different about them.

2. Describe:

a. the effect of a positive m .

b. the effect of a negative m .

3. Describe how you can tell how steep a line will be.

4. Describe:

a. the effect of a positive b .

b. the effect of a negative b .

c. the effect of not having a b at all.