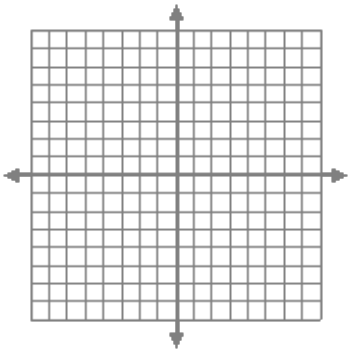
Chapter 7: Linear Equations

7.1b Slope-Intercept Form

Graph $y = -3x - 2$

slope:

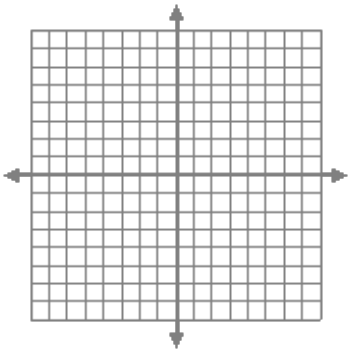
y-int:



Graph $y = \frac{1}{3}x + 4$

slope:

y-int:



In general, to write the equation of a straight-line graph, you can use the following two constants:

- _____
- _____

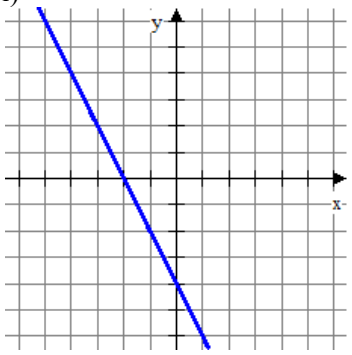
In general, the equation of a non-vertical line graph can be written in slope-intercept form:

Example:

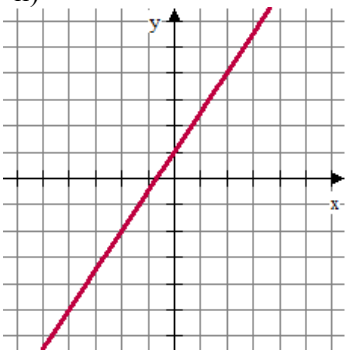
a) What is the slope and y-intercept of each line shown in the graphs below?

b) What is the equations of each line in slope-intercept form?

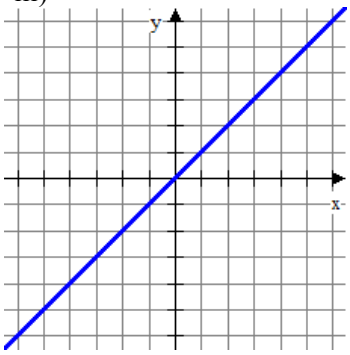
i)



ii)



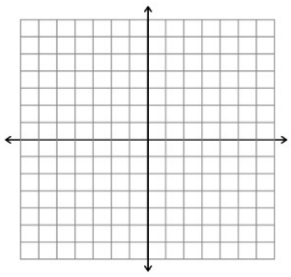
iii)



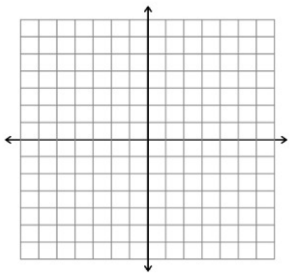
iv) slope -2, through (0,1)

Graph the following equations using the slope and y-intercept.

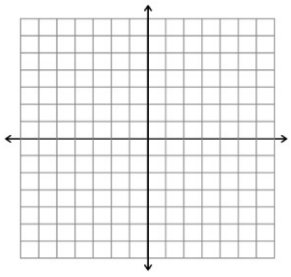
a) $y = 2x - 3$



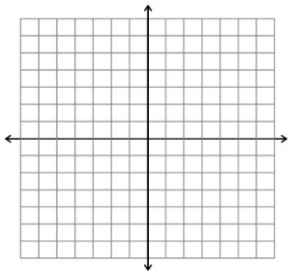
b) $y = -x + 1$



c) $y = 3x$



d) $y = 7$



- If we want to use the slope and y-intercept to graph an equation like $4x + 3y = 6$, we have to solve the equation for y in order to get the equation in the form $y = mx + b$, where m is the slope and b is the y-intercept.
  Change each equation into $y = mx + b$ by solving for y

a) $3x + y = 6$

c) $4x + 3y = 6$

b) $2x - 6y = 6$

d) $3x - 4y - 6 = 0$

3. Consider the equation $y = 2x + b$ What is each value of "b" if a graph of the line passes through each point?

a) (2,1)

b) x-intercept -2

4. For the equation $y = mx - 2$, what is each value of "m" if the line passes through each point?

a) (-2,2)

b) x-intercept 2

Assignment: p349 #1-10