

## The y-Intercept and the Slope

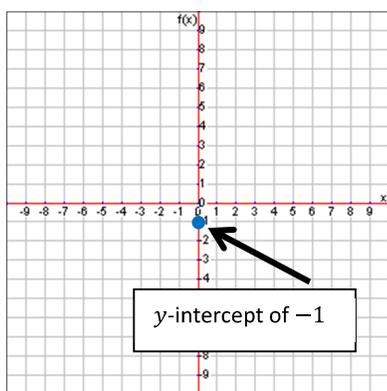
Once you have an equation in slope-intercept form, start by graphing the y-intercept on the coordinate plane. From the y-intercept, move the rise and run of the slope to plot another point. Finally, draw the line that connects the two points. Let's use our previous equations to graph step-by-step.

### Example 1

$$y = 2x - 1$$

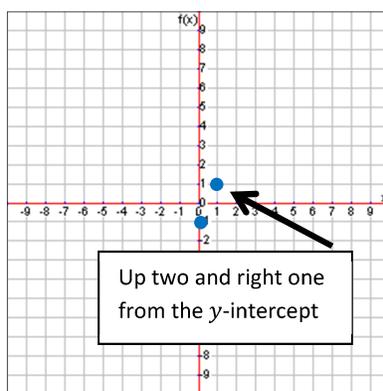
#### Step 1

The y-intercept is  $-1$ , so we plot a point at  $-1$  on the y-axis to begin.



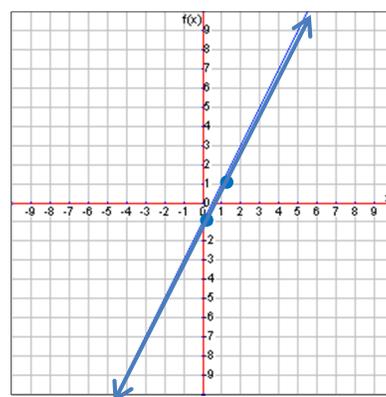
#### Step 2

Next, the slope is 2 which means a rise of 2 and a run of 1. So we'll move up two and right one to plot the next point.



#### Step 3

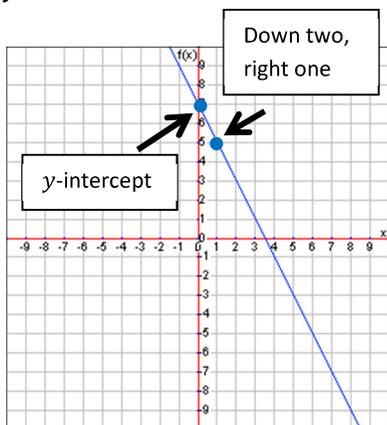
Finally, connect the dots with a line. This completes the graph of our linear function.



Here are the rest of the examples graphed.

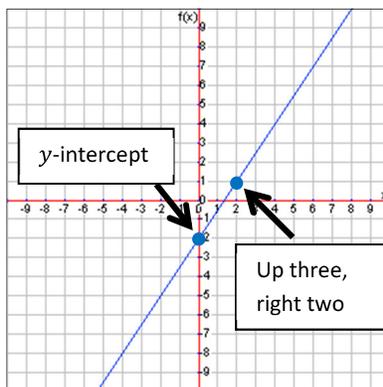
### Example 2

$$y = -2x + 7$$



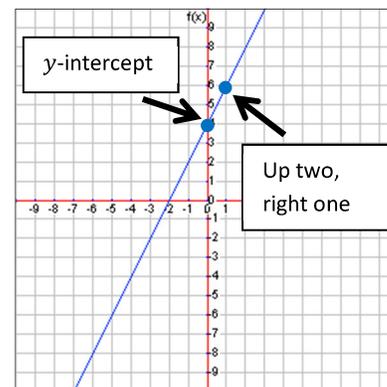
### Example 3

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



### Example 4

$$y = 2x + 4$$



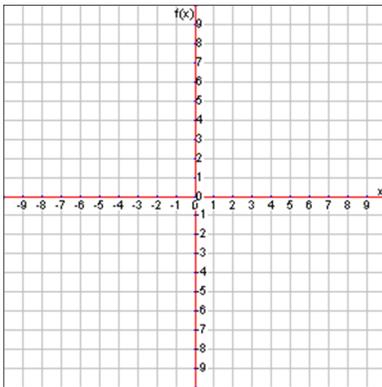
## Lesson 6.1

Identify the slope as a fraction and the y-intercept of each equation. Then graph on the coordinate plane.

1.  $y = 2x + 1$

Slope:

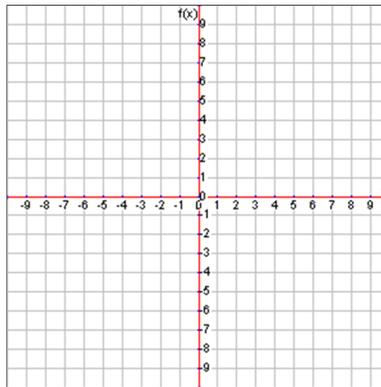
y-int:



2.  $y = 3x - 4$

Slope:

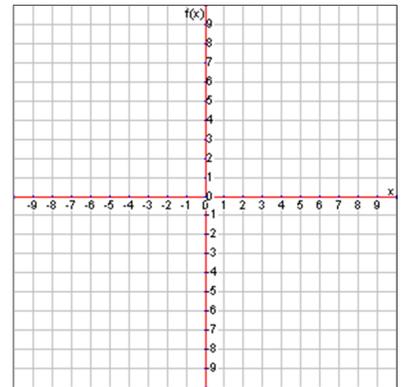
y-int:



3.  $y = \frac{2}{3}x + 5$

Slope:

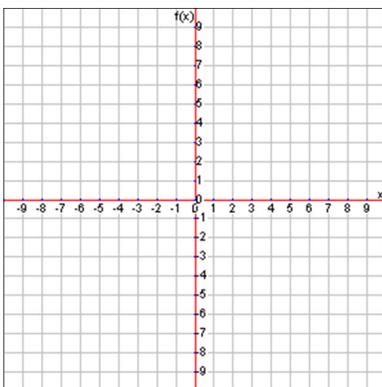
y-int:



4.  $y = 7$

Slope:

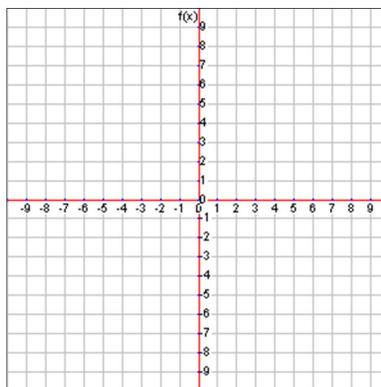
y-int:



5.  $y = -3x - 2$

Slope:

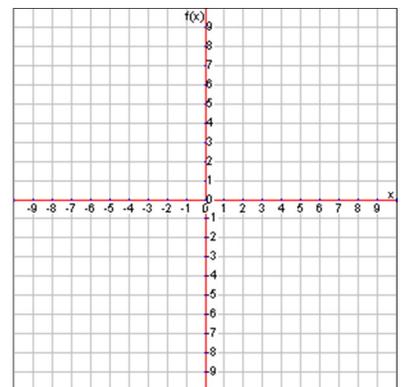
y-int:



6.  $y = -\frac{1}{3}x + 5$

Slope:

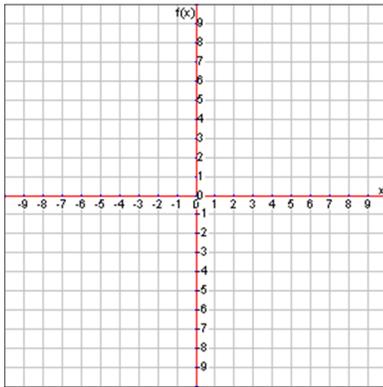
y-int:



$$7. y = \frac{2}{5}x - 2$$

Slope:

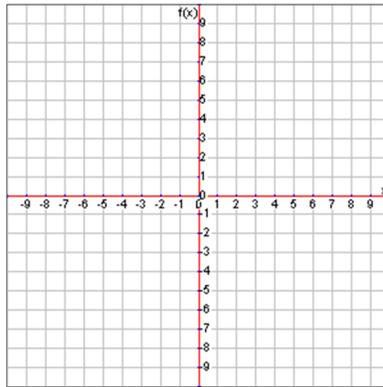
y-int:



$$8. y = -\frac{3}{4}x - 1$$

Slope:

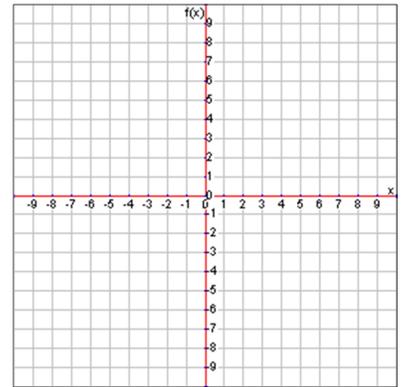
y-int:



$$9. y = -4$$

Slope:

y-int:

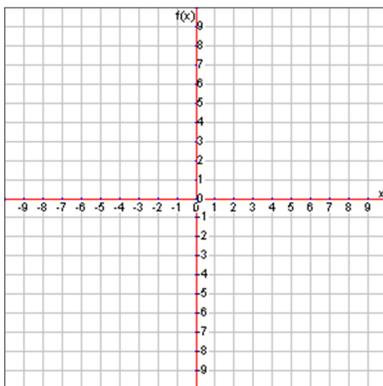


$$10. x = 2$$

*Hint: This is not a function!*

Slope:

y-int:

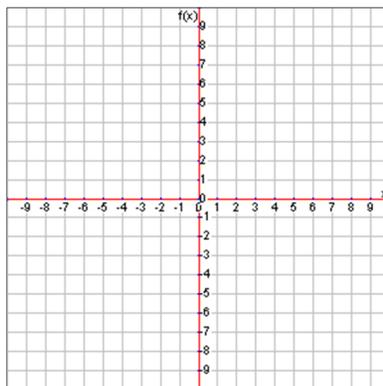


$$11. x = -6$$

*Hint: This is not a function!*

Slope:

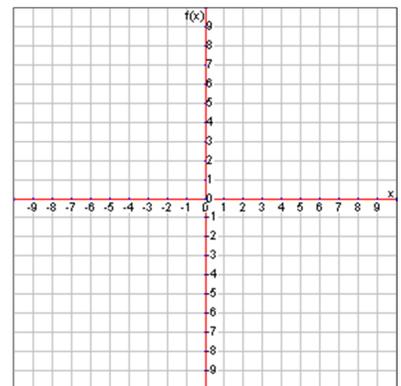
y-int:



$$12. y = 4x - 5$$

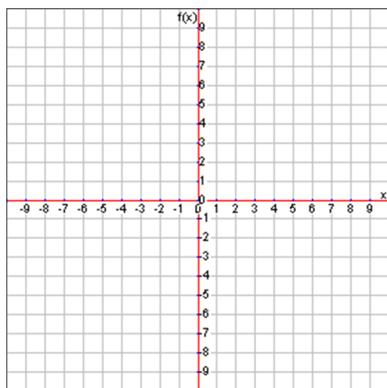
Slope:

y-int:

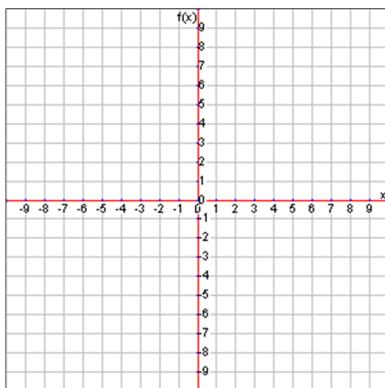


Put the following equations in slope-intercept form and then graph them on the coordinate plane.

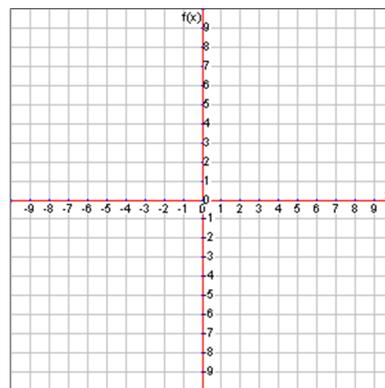
13.  $2x + y = 2$



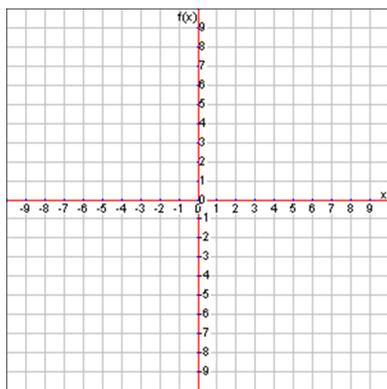
14.  $-3x + y = 4$



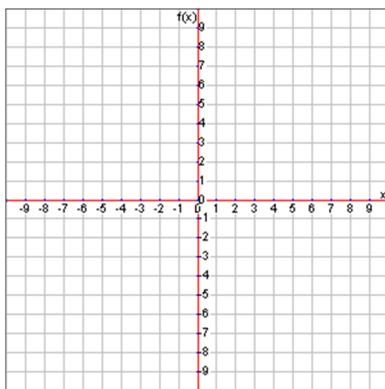
15.  $4x + y = -5$



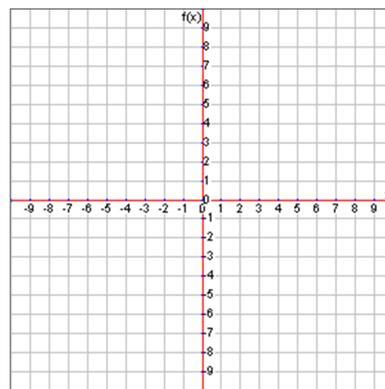
16.  $4x + 2y = 6$



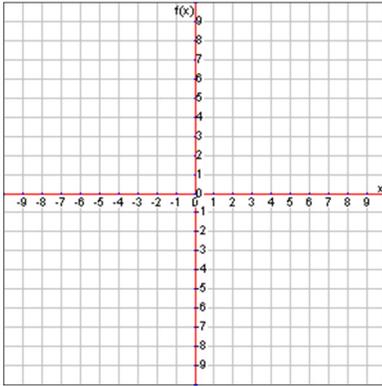
17.  $-6x + 3y = -9$



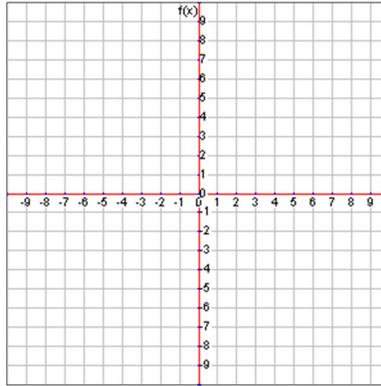
18.  $x + 3y = 6$



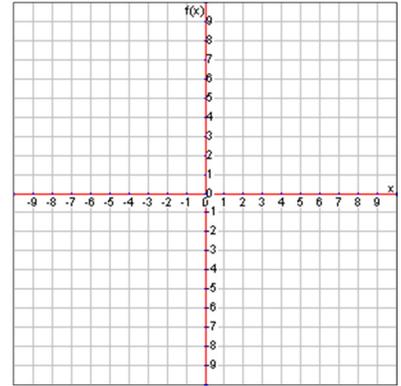
$$19. -2x + 3y = 12$$



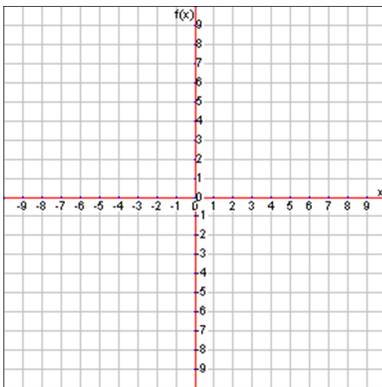
$$20. 4x - 2y = 8$$



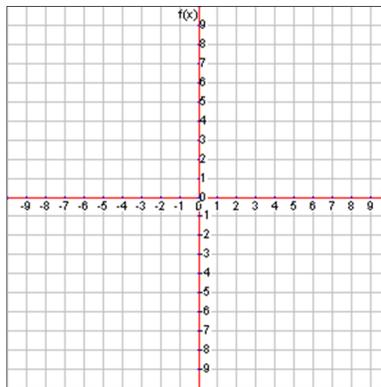
$$21. -2x - 3y = -9$$



$$22. -2x + y = 4$$



$$23. 6x + 2y = -8$$



$$24. 2x - 3y = 9$$

