

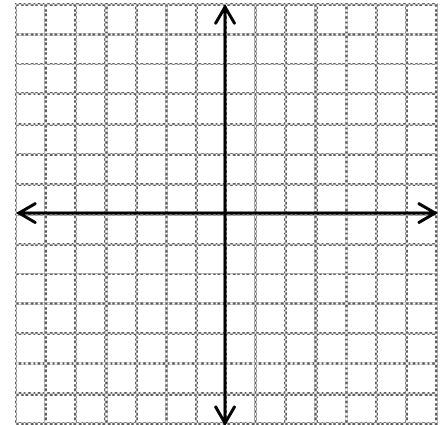
## Summary of Methods for Graphing a Linear Equation

### Graph a line using Point Plotting - Equation:

[Step 1] Solve the equation for  $y$ .

[Step 2] Plug in *random* values for  $x$  to determine the  $y$  values.

$x$	$y=$	$(x, y)$
	$y =$	
	$y =$	
	$y =$	



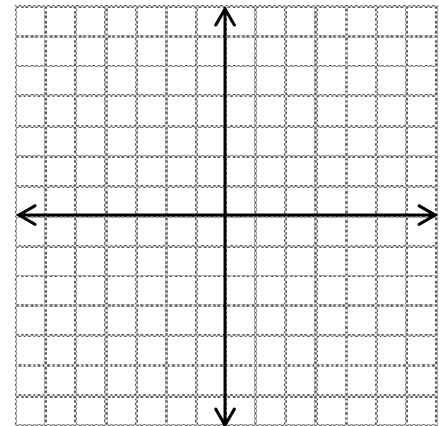
[Step 3] Plot the points and draw a line through them.

### Graph a line using x- and y-intercepts - Equation:

[Step 1] Write the equation in Standard Form:  $Ax + By = C$

[Step 2] Calculate the x- and y-intercepts:

$x$	$y$	$(x, y)$	
	0		x-intercept
0			y-intercept



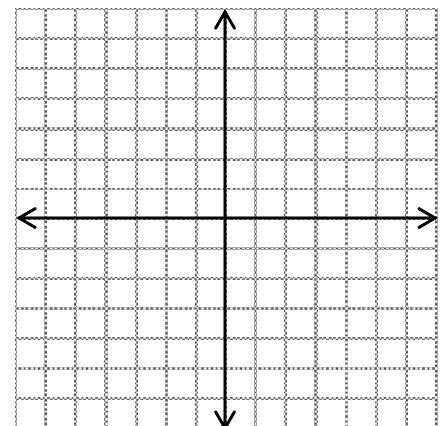
[Step 3] Plot the points and draw a line through them.

### Graph a line using Slope - Equation:

[Step 1] Write the equation in Slope-Intercept Form:  $y = mx + b$

The slope is represented by the letter **m**. The y-intercept is the letter **b**; which indicates where the graph crosses the y axis. If you plug in 0 for  $x$ ,  $y = b$ ; the y-intercept point is  $(0, b)$ .

$x$	$y$	$(x, y)$	<b>Slope =</b>
0			y-intercept



[Step 2] Plot the y-intercept point. Use the slope to plot other points.

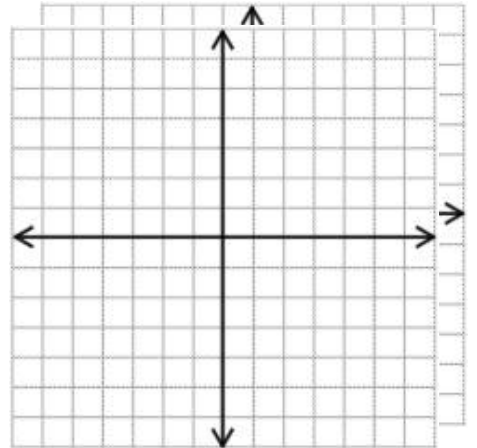
*Remember: To plot points on the other side of the y-intercept, use the opposite value of the numerator and the opposite value of the denominator, i.e.,  $\frac{-(rise)}{-(run)}$ .*

[Step 3] Draw a line through the points.

**Graph a horizontal line - Equation: \_\_\_\_\_**

[Step 1] Go to the number on the y - axis.

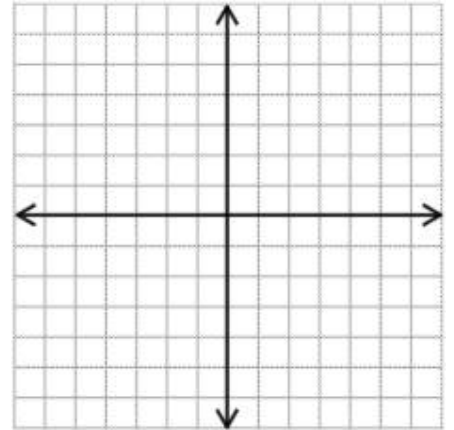
[Step 2] Draw a horizontal line through that point



**Graph a vertical line - Equation: \_\_\_\_\_**

[Step 1] Go to the number on the x-axis.

[Step 2] Draw a horizontal line through that point



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Practice: Graph the following using any method

1)  $7x + y = 5$

2)  $3x + 5y = -5$

3)  $y = -5$

6)  $x = 5$

7)  $x + y = 0$

8)  $9x + y = 4$

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

12)  $y = 2x + 5$