M8 - 9.0 - Graphing Review

Table of Values

TOV

x	y
-3	
0	
3	

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

Increments of x by denominator of slope away from zero. Or y-coefficient*.

Slope - Intercept $\boxed{+1\,y=}$
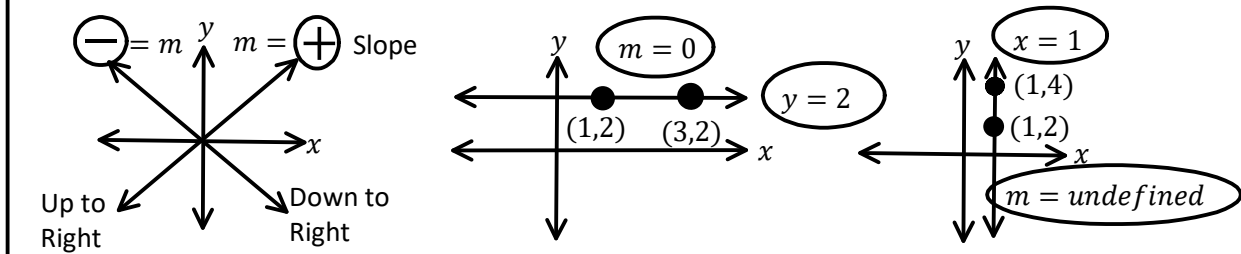
$$y = mx + b$$

slope   y-intercept $(0, b)$

Graph Steps
1) Plot y-int
2) Use Slope

Find Equation
1) Find y-int
2) Find Slope

$\boxed{y = f(x)}$

$\boxed{\begin{array}{c}(2,4)\\(x,y)\end{array}}$

x	y
-2	
-1	
0	
1	
2	

(x_1, y_1) (x_2, y_2)
$(5,4)$ $(-2,3)$

Draw a Graph and Count!

$$Slope = m = \frac{rise}{run} = \frac{y_2 - y_1}{x_2 - x_1}$$

$\ominus = m$ $m = \oplus$ Slope

Up to Right   Down to Right

$m = 0$ $(1,2)$ $(3,2)$ $y = 2$

$x = 1$ $(1,4)$ $(1,2)$ $m = undefined$

Parallel
Same slope

$$m_1 = m_2$$

Perpendicular 90°
Negative Reciprocal (Flip) Slope

$$m_2 = -\frac{1}{m_1}$$

Find Equation $\boxed{y = mx + b}$

$\boxed{y = \frac{2}{1}x + 1}$ $y = \frac{\Delta y}{\Delta x}x + b$

x	y
0	b
1	3
2	5

Δx Δy
Δx Δy

$$\frac{\Delta y}{\Delta x} \; Consistent^*$$

$\boxed{y = b; x = 0}$

Slope-Point (x_1, y_1)
$(3,5)$

$$y - y_1 = m(x - x_1)$$

y coordinate   slope   x coordinate

Graph Steps
1) Plot Point
2) Use Slope

Find Equation
1) Find Point
2) Find Slope

General/Standard

$$Ax + By = C$$

$$Ax + By + C^* = 0$$

x	y
0	
	0

Steps : Find Intercepts
$y - int: x = 0\ (0, y), put\ zero\ in\ for\ x\ and\ solve$
$x - int: y = 0\ (x, 0), put\ zero\ in\ for\ y\ and\ solve$

$\boxed{\begin{array}{l}No\ Fractions\\x\ term\ positive\\+x, y, \# = 0^*\end{array}}$

$$m = -\frac{A}{B} \qquad y - int = \pm\frac{C}{B}$$

$$y = -\frac{A}{B}x \pm \frac{C}{B}$$

y (Output)

$(0,3)$ (x,y) $(2,3)$

$(0,1)$

$(2,0)$ $(4,0)$

$(-4,-2)$ (x_2, y_2)

(x_1, y_1)

x (Input)

$\boxed{y\ depends\ on\ x!}$

Skip Increments

102
101
50   55