

3.4

Slope = $\frac{\text{rise}}{\text{run}}$

$$y = mx + b$$

given 2 points (x_1, y_1) (x_2, y_2) $m = \frac{y_2 - y_1}{x_2 - x_1}$
 $(1, -3)$
 $(4, -6)$ and $(7, -3)$

$$m = \frac{-3 - (-6)}{7 - 4} = \frac{-3 + 6}{3} = \frac{3}{3} = 1$$

$$\frac{-6 - (-3)}{4 - 7} = \frac{-6 + 3}{-3} = \frac{-3}{-3} = 1$$

Given an equation
solve for y

$y = mx + b$
slope-intercept form

$$3x - 4y = 12$$

$$-4y = -3x + 12$$

$$y = \frac{-3}{-4}x + \frac{12}{-4}$$

$$m = \frac{3}{4}$$

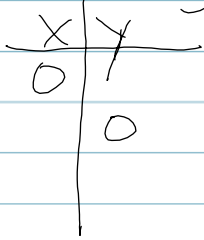
$$y = \frac{3}{4}x - 3$$

$$y\text{-int } -3 \quad (0, -3)$$

Graphing

method #1

intercepts



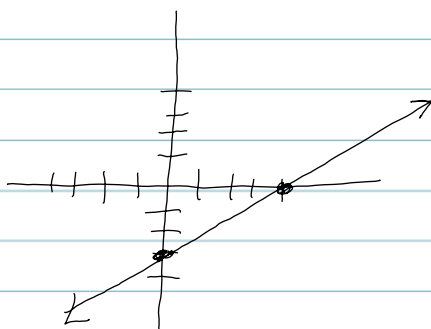
method #2 slope intercept

start with y intercept

let slope lead you to next point.

$$3x - 4y = 12$$

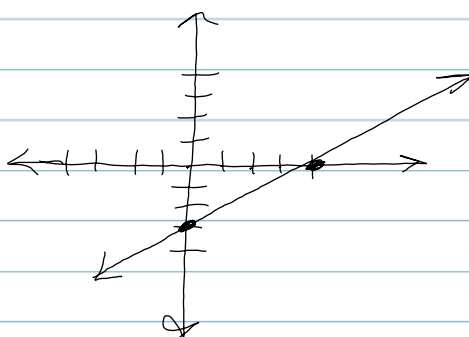
x	y
0	-3
4	0



$$y = \frac{3}{4}x - 3$$

(0, -3)

$$m = \frac{y}{x} = \frac{3}{4} = \frac{-3}{-4}$$



parallel lines

same slopes

$$y = 3x + 2$$

$$y = 3x + 7$$



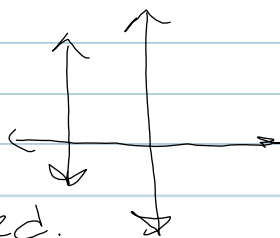
perpendicular lines

opposite reciprocal slopes

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

$$m_1 m_2 = -1$$

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



undefined.

