

$$y = mx + b$$

Example 2: Write an equation of the line with the following information:

a) slope = $\frac{1}{2}$, y-intercept = -1

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

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

b) slope = -2, has point (0, 9)

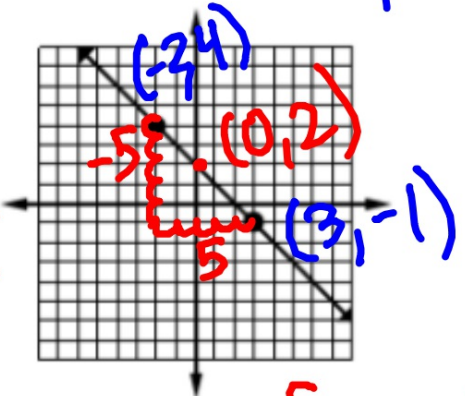
$$y = -2x + 9$$

↑
y-int

c) through points (3, -2) and (1, -3)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-3 - (-2)}{1 - 3} = \frac{-1}{-2} = \frac{1}{2}$$

d)



$$m = \frac{1}{2} \quad y = \frac{1}{2}x + b$$

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

$$-3 = \frac{1}{2}(1) + b$$

$$-3 = \frac{1}{2} + b$$

$$-3 - \frac{1}{2} = b = -3\frac{1}{2}$$

$$m = -\frac{5}{5} = -1$$

$$b = 2$$

$$y = -1x + 2$$

$$y = -x + 2$$