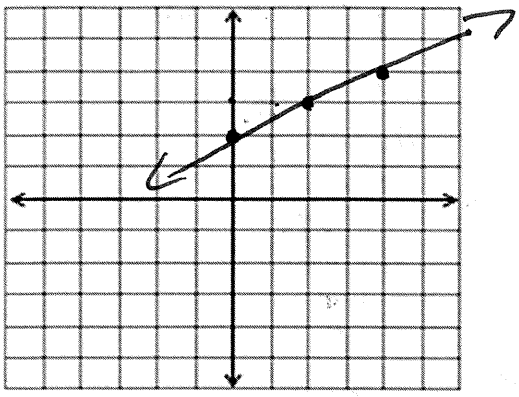
Unit 4: Day 4 Notes Name: _____

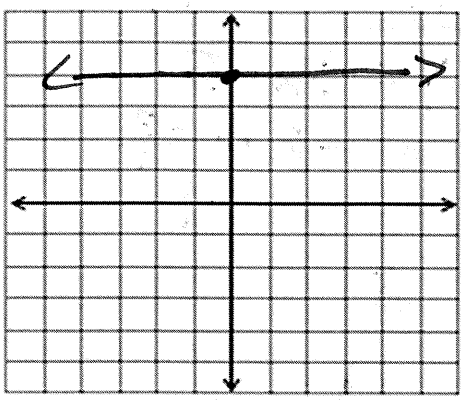
Objective: I can write linear equations using slope-intercept form. I can graph linear equations in slope-intercept form.

Graph the equation:

a) $y = \frac{1}{2}x + 2$ $m = \frac{1}{2}$ ($\frac{\text{rise}}{\text{run}}$) $b = 2$



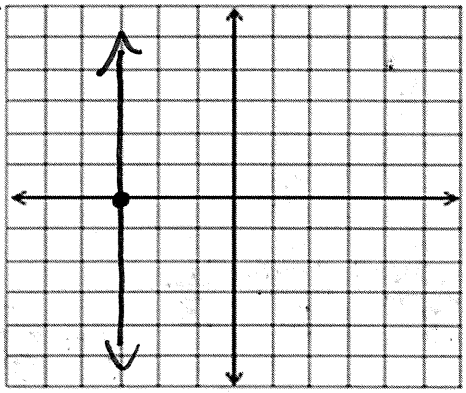
b) $y = 4$ $m = 0$ $b = 4$



c) $x = -3$

m = undefined

b = NONE



Slope-intercept form: $y = mx + b$ (m: slope, b: y-int)

Write each linear equation in slope intercept form. * solve for y

1.) $y - 5 = \frac{1}{3}(x - 9)$

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

$+5 \quad +5$

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

2.) $y + 4 = 5x$

$-4 \quad -4$

$y = 5x - 4$

3.) $-3x + 2y = 2x - 6$

$+3x \quad +3x$

$\frac{2y}{2} = \frac{5x}{2} - \frac{6}{2}$

$y = \frac{5}{2}x - 3$

4.) $y = 2(x - 5)$

$y = 2x - 10$

Find the slope and *y*-intercept, then graph each equation.

$y = mx + b$

a) $y - 1 = -3(x + 2)$

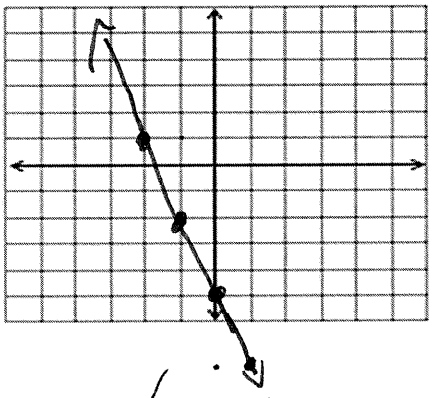
$y - 1 = -3x - 6$

$+1 \quad +1$

$y = -3x - 5$

slope: -3 or $\frac{-3}{1}$

***y*-intercept:** -5



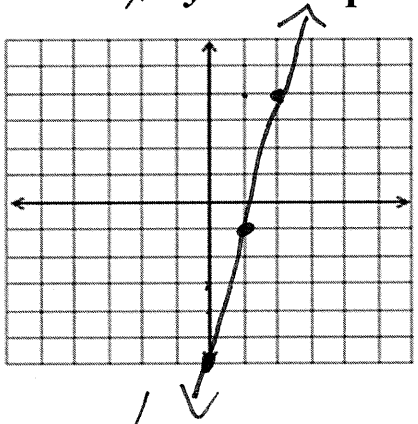
b) $y + 2 = 5x - 4$

$-2 \quad -2$

$y = 5x - 6$

slope: $\frac{5}{1}$

* ***y*-intercept:** -6



c) $3y + 2x = -6$

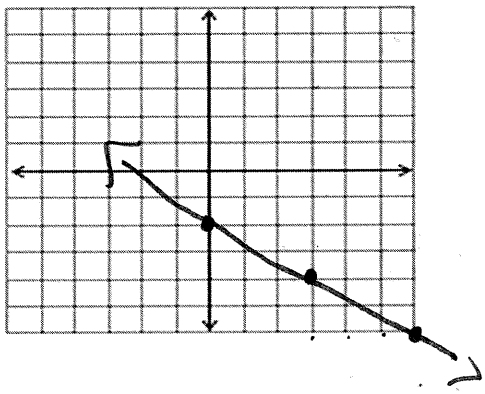
$-2x \quad -2x$

$\frac{3y}{3} = \frac{-2x}{3} - \frac{6}{3}$

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

slope: $-\frac{2}{3}$

***y*-intercept:** -2



d) $4x + 3y = 2x - 1$

$-4x \quad -4x$

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

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

slope: $-\frac{2}{3}$

***y*-intercept:** $-\frac{1}{3}$