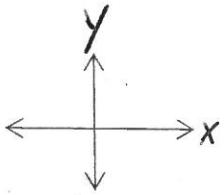
Name: _____ Period: _____

What I should know from Algebra I?
PART I

1. Draw the coordinate plane and clearly label the x and y axes.



a. List any four ordered pairs on the x-axis. (1,0) (2,0) (3,0) (4,0)
b. What do they have in common? y=0
c. Write the equation of this line (x-axis). y=0
d. List any four ordered pairs on the y-axis. (0,1) (0,2) (0,3) (0,4)
e. What do they have in common? x=0
f. Write the equation of this line (y-axis). x=0

2. What is the slope of a line? Change in y values divided by the change in x values between two points on a line.

a. Write the formula to find slope of a line:

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

b. Find the slope of a line that contains the points (3, -2) and (1, 2). 4/-2 = -2
c. Find the slope of a line that contains the points (2, 6) and (1, 6). 0
d. Find the slope of a line that contains the points (4, 2) and (4, 3). 1/0 = undefined

3. What is Slope-Intercept Form of a line? $y = mx + b$

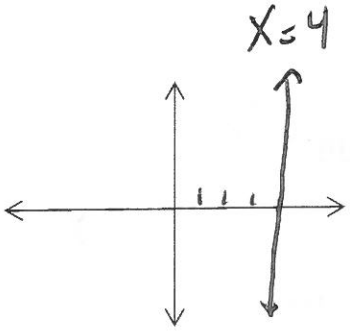
4. What is Standard Form of a line? $Ax + By = C$

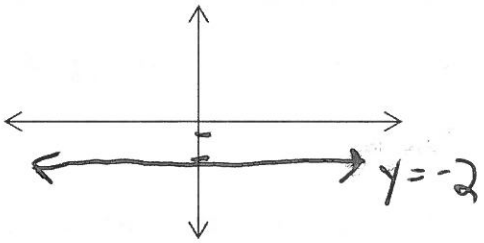
5. What is Point-Slope Form of a line? $y - y_1 = m(x - x_1)$

6. Each of the following equations is an equation of a line. Accurately sketch each line and find its slope, x-intercept, and y-intercept, where possible.

a. $x = 4$ slope = und.
x-intercept = (4, 0)
y-intercept = (___, ___)
↑ None

b. $y = -2$ slope = 0
x-intercept = (None)
y-intercept = (0, -2)





7. In the following examples, the equations are in Standard Form. First, rewrite the equation in Slope-Intercept Form. Accurately sketch each line and find its slope, x-intercept, and y-intercept, where possible.

a. $2x - 3y = 12$ slope = 2/3

x-intercept = (6 , 0)

y-intercept = (0 , -4)

$2x - 3(0) = 12$

$x = 6$

$\frac{3y}{-3} = \frac{-2x}{-3} + \frac{12}{-3}$

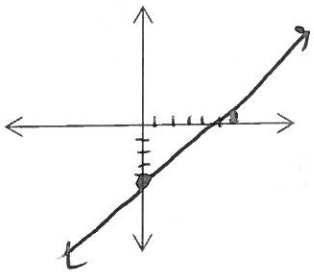
$y = \frac{2}{3}x - 4$

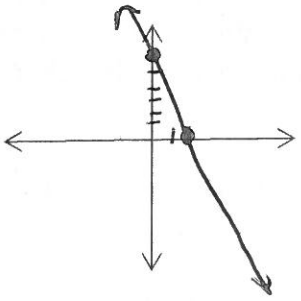
b. $3x + y = 6$ slope = -3

x-intercept = (2 , 0)

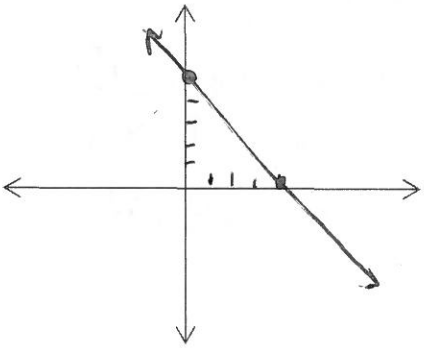
y-intercept = (0 , 6)

$y = -3x + 6$





8. Sketch the line with x-intercept (4,0) and y-intercept (0,5). Find the slope of this line. -5/4 Find the slope of a line parallel to this line. -5/4 Find the slope of a line perpendicular to this line. 4/5



9. Find the slope and y-intercept of the line with the equation given below. Rewrite the equation in Slope-Intercept Form, if necessary.

		m	b	
a.	$y = \frac{1}{2}x + 7$	1/2	7	$y = \frac{1}{2}x + 7$
b.	$3x + y = 6$	-3	6	$y = -3x + 6$
c.	$\frac{4x}{2} - \frac{2y}{2} = \frac{8}{2}$	2	-4	$y = 2x - 4$

$2x - y = 4 \rightarrow y = 2x - 4$

10. The slopes of two lines are given. Determine if the the lines are parallel, perpendicular, or neither.

a. $\frac{2}{4}, \frac{3}{6}$ parallel

b. $5, -\frac{1}{5}$ perpendicular

c. $\frac{3}{7}, \frac{7}{3}$ neither

d. $1, -1$ perpendicular.

11. Write the equation of the line with slope $\frac{1}{2}$ and passes through ordered pair (0, -8).

$y = \frac{1}{2}x - 8$

12. Write the equation of the line that passes through ordered pairs (-1,7) and (-3, 11).

$y = -2x + 5$