

Name _____

Review Notes

I. Slope

positive

negative

vertical
undefined

Horizontal
zero

II. Equation

$$y = mx + b$$

$m = \text{slope}$

$b = y\text{-int}$

III

Coordinate

(x, y)

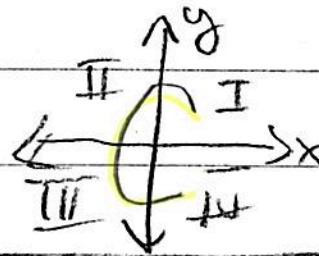
IV. Graphing

positive $m = \frac{2}{3} \rightarrow$
 negative $m = -\frac{5}{1} \downarrow$
 $B = (0, 5)$
 begin

V. Slope-formula

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

VI. Quadrants & axis



VII. Slope-Intercept Form

* Equations of lines must be in slope-intercept form

ex ① $2y = 8x + 6$
 $\frac{2y}{2} = \frac{8x}{2} + \frac{6}{2}$

② $5x + 3y = 9$
 $-5x \quad -5x$

$y = 4x + 3$

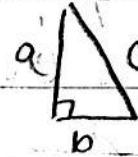
slope y -int

$3y = -5x + 9$
 $\frac{3y}{3} = \frac{-5x}{3} + \frac{9}{3}$

$y = -\frac{5}{3}x + 3$ ← y -int

VIII. Pythagorean Theorem

$$a^2 + b^2 = c^2$$



x

IX Writing an equation given slope + point

Ex: slope: -5 points: $(2, 16)$
 m x y

$$y = mx + b$$

$$m = -5$$

$$b = 26$$

$$y = -5x + 26$$

$$y = mx + b$$

$$16 = -5(2) + b$$

$$16 = -10 + b$$

$$\frac{+10}{+10} \quad \frac{+10}{+10}$$

$$26 = b$$

X Writing an equation given two points

Ex: points $(3, 7)$ + $(5, 15)$
 x_1 y_1 x_2 y_2

$$y = mx + b$$

$$m = 4$$

$$b = -5$$

$$y = mx + b$$

$$7 = 4(3) + b$$

$$7 = 12 + b$$

$$\frac{-12}{-12} \quad \frac{-12}{-12}$$

$$-5 = b$$

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

$$\frac{15 - 7}{5 - 3} = \frac{8}{2} = 4$$

$$y = 4x - 5$$

XI Writing an equation from a table

Ex	x	y
x_1	10	4
x_2	9	3
	6	0
	5	-1

$$y = mx + b$$

$$m = 1$$

$$b = -6$$

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

$$x_2 - x_1$$

$$\frac{3 - 4}{9 - 10} = \frac{-1}{-1} = 1$$

$$y = mx + b$$

$$4 = 1(10) + b$$

$$4 = 10 + b$$

$$\frac{-10}{-10} \quad \frac{-10}{-10}$$

$$-6 = b$$

$$y = 1x - 6$$

