Algebra 2 – Unit 1

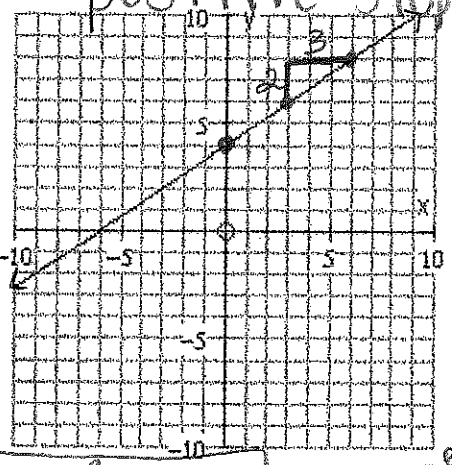
Name: _____ Date: _____ Period: _____

Lesson 1.06
Write Equations Notes

A. Give the slope/intercept equation for the following lines.
B. List at least 3 coordinate points that satisfy the equation and graph.
C. Write the equation of the line in slope-intercept form. $y = mx + b$
D. Write the equation of the line in point-slope form using any point on the line. $(y - y_1) = m(x - x_1)$

1.

positive slope



m = $\frac{2}{3}$

b = 4

(0, 4)

(3, 6)

(6, 8)
x, y,

Equations: $y = \frac{2}{3}x + 4$ ← same → $y = \frac{2}{3}x + 4$

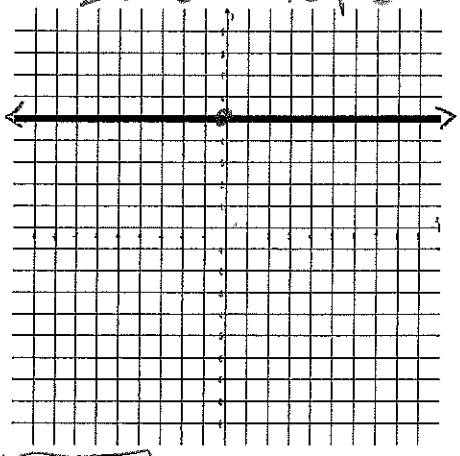
$y - 8 = \frac{2}{3}(x - 6)$

$y - 8 = \frac{2}{3}x - 4$

$+8 \quad +8$

2.

zero slope



m = 0

b = 5

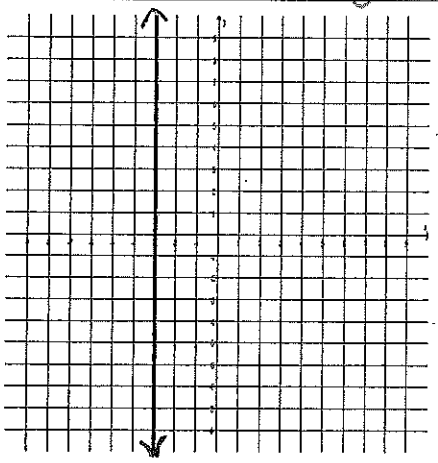
(-4, 5)

(0, 5)

(3, 5)
x, y,

Equations: $y = 5$

3.



m = Und

b = NONE

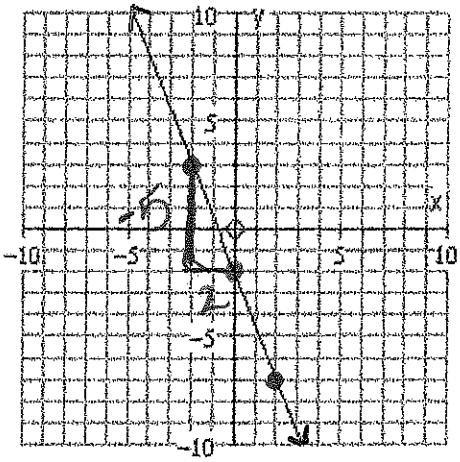
(-3, 6)

(-3, 2)

(-3, -1)

Equations: $x = -3$

4.



m = $\frac{-5}{2}$

b = -2

(0, -2)

(2, -7)

(-2, 3)
x, y,

Equations: $y = \frac{-5}{2}x - 2$

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

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

$+3 \quad +3$

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

5. Write an equation of a line, in slope-intercept form (y = mx + b), whose slope = 3 and passes through the point (0 , -2)

$-2 = 3(0) + b$

$-2 = b$

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

6. Write an equation of a line, in point-slope form ($y - y_1$) = m($x - x_1$), whose slope = ½ and passes through the point (4 , 7)

$y - 7 = \frac{1}{2}(x - 4)$

$y - 7 = \frac{1}{2}x - 2$

$+7 \qquad +7$

$\boxed{y = \frac{1}{2}x + 5}$

7. Write an equation of a line, in slope-intercept form (y = mx + b), that passes through the points (6, -1) and (8, 3)

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 + 1}{8 - 6} = \frac{4}{2} = 2$

$y + 1 = 2(x - 6)$

$y + 1 = 2x - 12$

$-1 \qquad -1$

$\boxed{y = 2x - 13}$