Name:_____   Date:_____

Notes
Algebra Section 5.1
Pages 283-289

Goal: "You will write equations of lines"

Slope – intercept form:

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Situation 1: Write the equation of a line in slope – intercept form if given slope and the y – intercept

Ex:
  Slope: −2
  y – intercept: 5

Ex:
  Slope: 8
  y – intercept: −7

Ex:
  Slope: 4
  y – intercept: −3

Ex:
  Slope: $\frac{3}{4}$
  y – intercept: −3

Ex:
  Slope: 0
  y – intercept: 5

Ex:
  Slope: −1
  y – intercept: 0

Situation 2: Write the equation of a line in slope – intercept form if given two points on the line

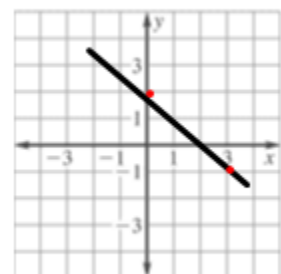   **1.** Find the _____using the formula_____.   **Ex:** $(0, -5)$ $(3, -1)$

   2. Find the _____ (y-intercept $x=$)

   3. Plug in _____ and _____.

Ex: $(0, 2)$ $(4, -1)$ **Ex:** $(0, 1)$ $(4, -1)$ **Ex:**

Situation 3: Write an equation of a line given two function values

1. Create two _____ _____.   **Ex:** $f(0) = 5$ $f(4) = 17$

2. Find the _____.

3. Find the _____. ($x=0$)

4. Plug in _____ and _____.

Ex: $f(0) = -2$ $f(8) = 4$ **Ex:** $f(-3) = 6$ $f(0) = 5$

Ex: $f(0) = 7$ $f(3) = 1$

Real – world connection: $y = mx + b$ *In the real world, $m =$ _____ rate of _____
                                                              and $b =$ _____ value.

Ex: A recording studio charges musicians an initial fee of \$50 to record an album. Studio time costs an additional \$35 per hour.
   a) Write an equation that gives the total cost to record an album as a function of studio time needed.

   b) Find the total cost to make an album that takes 10 hours to record.

Ex: A dance studio charges \$20 to use the facility and \$25 per hour of instruction.
   a) Write an equation that gives the total cost as a function of hours of dance instruction.

   b) Find the total cost for 2 hours of dance instruction.