5.1: Write Linear Equations in Slope – intercept form

Goals: *Write an equation in slope – intercept form given slope and y – int.
*Write an equation in slope – intercept form given two points
*Write an equation in slope – intercept form given two function values

---

Slope – intercept form:

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. Use the given points to find _____
   Use the formula:

   Ex: $(0, -5)$ $(3, -1)$

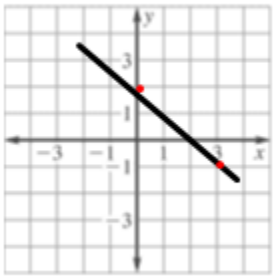
2. Recall that the y-intercept happens when _____

3. Plug in the _____ and the _____ into the equation

Ex: (0, 2) (4, –1)

Ex: (0, 1) (4, –1)

Ex:



Ex: (0, 5) and (4, 17)

Ex: (0, −2) and (8, 4)

Ex: (−3, 6) and (0, 5)

Ex: (0, 7) and (3, 1)

Real – world connection: $y = mx + b$ *In the real world, m =

and b =

Ex: A recording studio charges musicians an initial fee of $50 to record an album. Studio time costs an additional $35 per hour.

x: y:

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.

x: y:

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.