

## 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
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**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.

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

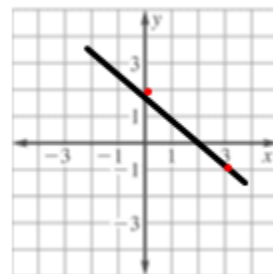
2.

3.

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

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

**Ex:**



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

1.

**Ex:**  $f(0) = 5$   $f(4) = 17$

2.

3.

4.

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

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

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

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Real – world connection:  $y = mx + b$

\*In the real world,  $m =$   
and  $b =$

Imagine you are babysitting and getting paid \$12 an hour, but the family also leaves \$20 for a pizza for dinner. What does the 12 represent and what does the 20 represent?

**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.