**Writing Linear Equations Stations Activity**

**Objectives:**

1. To graph linear equations.
2. To complete a table of values for each equation.
3. To identify the slope of linear equations in slope-intercept form.
4. To identify the y-intercept of linear equations in slope-intercept form.
5. To explain the effects of “*m”* on a linear function in slope-intercept form.
6. To explain the effects of “*b*” on a linear function in slope-intercept form.

**Vocabulary:**

* *linear function:* a function used to create a line
* *parent function:* the most basic form of a function, before adding constants
* *slope:* the amount that the function increases or decreases as the x-value changes; the “*m*” value in an equation in slope-intercept form
* *y-intercept:* the point on a graph where the line crosses the ***y-axis***
* *slope-intercept form:* linear equation in the form ***y = mx + b***
* *x-axis:* the horizontal axis
* *y-axis:* the vertical axis

**Station 1**

**IF.4&5L: I can identify the slope and y-intercept of a linear function.**

1. Y = 2X – 7 2. Y = - -3

m = \_\_\_\_\_\_\_\_\_ m = \_\_\_\_\_\_\_\_\_

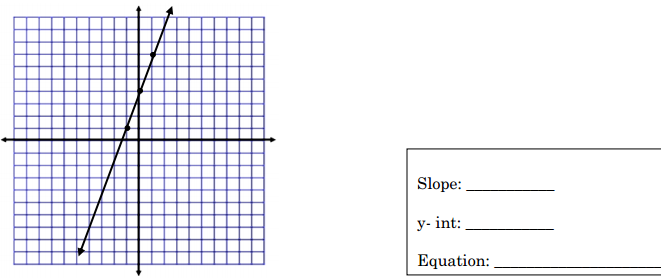
y –int. \_\_\_\_\_\_\_\_\_\_ y –intercept = \_ \_\_\_\_\_\_\_

1. Y = -2 4. Y = -3X + 

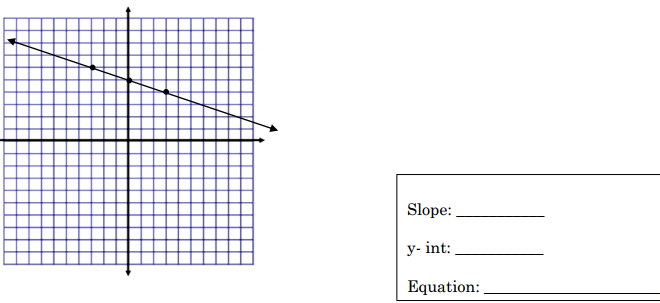
m = \_\_\_\_\_\_\_\_\_ m = \_\_\_\_\_\_\_\_\_

1. y –intercept = \_ \_\_\_\_\_\_\_ y –intercept = \_ \_\_\_\_\_\_\_

***5.***

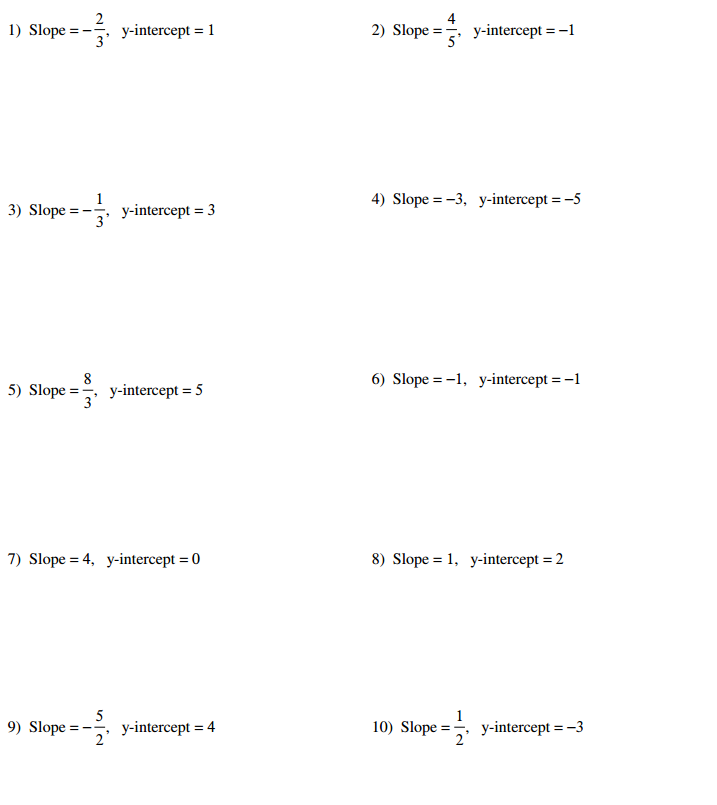


6.



**Station 2**

**REI.10&11L: I can write the equation of the line given the slope and y – intercept.**



You are visiting Baltimore, MD and a taxi company charges a flat fee of $3.00 for using the taxi and $0.75 per mile.

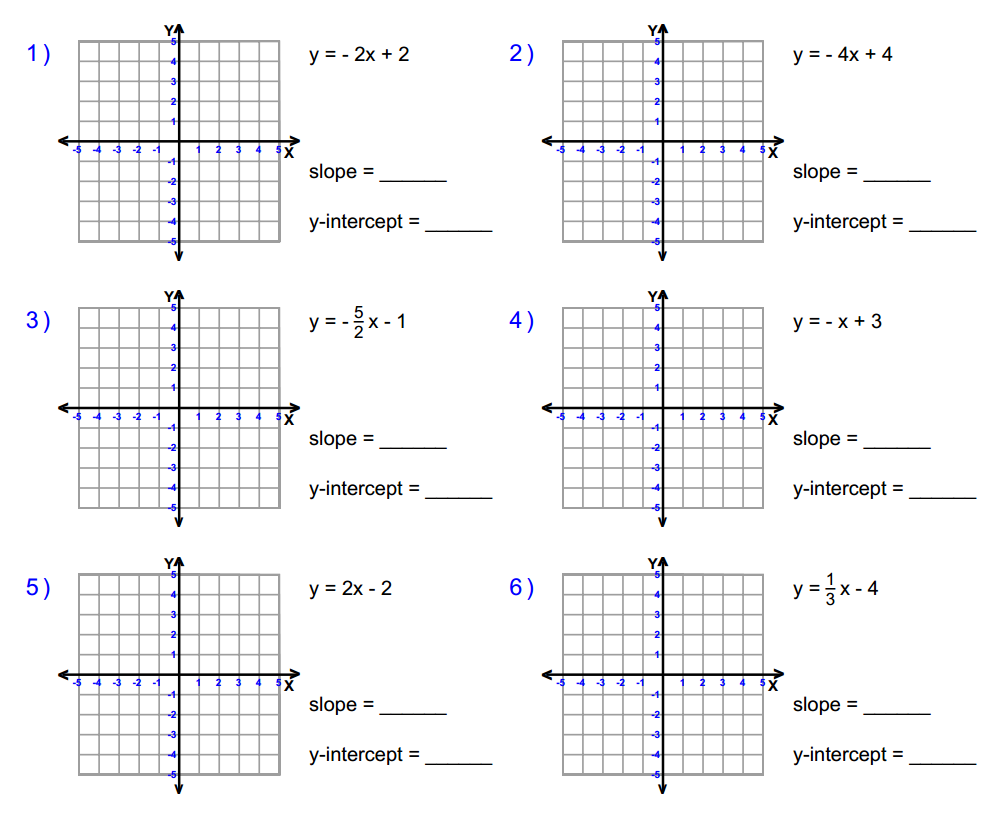
A. Write an equation that you could use to find the cost of the taxi ride in Baltimore, MD. Let x represent the number of miles and y represent the total cost.

B. How much would a taxi ride for 8 miles cost?

C. If a taxi ride cost $15, how many miles did the taxi travel?

**Station 3**

**REI.10&11L: I can sketch the line of each graph.**



**Station 4:**

**IF.4&5L: I can identify key characteristics of a line based on its equation.**

**Equation A: y = 2x + 1**

|  |  |
| --- | --- |
| **x** | **y** |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

***Fill*** in the table of values:

***Answer*** the following questions:

1. What is the slope of the function? \_\_\_\_\_
2. What does the slope tell you about the graph?
3. What is the y-intercept? (\_\_\_\_\_, \_\_\_\_\_)
4. What does the y-intercept tell you about the graph?

**Equation B: y = -2x + 1**

|  |  |
| --- | --- |
| **x** | **y** |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

***Fill*** in the table of values:

***Answer*** the following questions:

1. What is the slope of the function? \_\_\_\_\_
2. What does the slope tell you about the graph?
3. What is the y-intercept? (\_\_\_\_\_, \_\_\_\_\_)
4. What does the y-intercept tell you about the graph?

**Station 5**

**ACED.4L: I can rearrange standard form equations into slope-intercept form to identify key characteristics**

**Rewrite the equations in slope intercept form, y = mx + b, identify the slope and y - intercept.**

