

## Slope and Y-Intercept Activity

**Objective:** The student will be able to recognize an equation in Slope-Intercept form and pick out the slope and y-intercept when given an equation in that form.

**Description:** The students will find coordinates on a given linear equation, graph those points, list the slope and y-intercept of the resulting line, and use these to evaluate the original equation.

**Preparation:** The students should know:

How to evaluate an equation given a value for x;

How to graph a point given the coordinates of the point;

How to find the slope and y-intercept of a graphed line;

Arkansas Frameworks: LEI.2.AII.2

**Assessment:** Successful completion of the following worksheet.

## Slope and Y-Intercept Activity

For this activity, you will

- Substitute the values for  $x$  given in the 2<sup>nd</sup> column into the equation in the 1<sup>st</sup> column.
- Graph the two points from column 2 (Use included graph paper)
- List the slope and  $y$ -intercept of each line

Equation	Points on graph of equation	Slope	Y-intercept
$y=2x+3$	(0, __) (1, __)		
$y=-x+2$	(0, __) (1, __)		
$y=1/2 x- 4$	(0, __) (1, __)		
$y=-2x$	(0, __) (1, __)		
$y=7$	(0, __) (1, __)		

Once you have completed filling in the table, answer these questions:

- What do you notice about each equation and the slope of the line?
- What do you notice about each equation and the  $y$ -intercept of the line?
- Without graphing, what is the slope and  $y$ -intercept of:
  - $y = 4x + 1$
  - $y = -\frac{5}{2}x - 3$
  - $8x - 2y = 14$
  - $5x - 6y = -2$
  - $x = -10$

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## Answer Key

Table:

Row 1: (0,3), (1,5); 2; 3

Row 2: (0,2), (1,1); -1; 2

Row 3: (0,-4), (1,-3.5);  $\frac{1}{2}$ ; -4

Row 4: (0,0), (1,-2); -2; 0

Row 5: (0,7), (1,7); 0; 7

#1. The coefficient of x is the slope of its graph.

#2. The constant term of the equation is the y-intercept of its graph.

#3i. 4; 1

#3ii.  $-\frac{5}{2}$ , -3

#3iii. 4, -7

#3iv.  $\frac{5}{6}$ ,  $\frac{1}{3}$

#3v. undefined, none

Name \_\_\_\_\_

Class \_\_\_\_\_

School \_\_\_\_\_

Assignment \_\_\_\_\_

