Concept: Slope of a Line

Name:

- **You should have completed Graphing – Section 7 Part A: Slope of a Line before beginning this handout.**

PART B: COMPUTER COMPONENT

Instructions: In UMATH X follow the **Content Menu** path:

Graphing > **Slope of a Line**

NOTE: *Use the **Menu** button in order to get to the lesson where you left off.*

Work through all Sub Lessons of the following Lessons **in order**:

- *Formula*
- *Parallel Lines*
- *Perpendicular Lines*
- *Positive and Negative Slope*
- *Special Slopes*
- *Sketch Line, Given Point and Slope*
- *Slopes of Parallel Lines*
- *Slopes of Perpendicular Lines*

As you work through the computer exercises, you will be prompted to make notes in your notebook/math journal.

NOTES

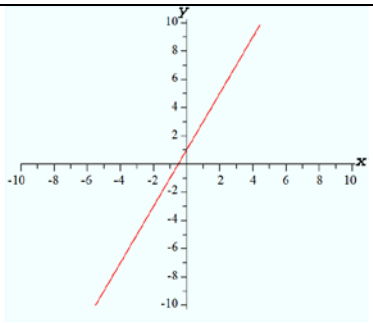
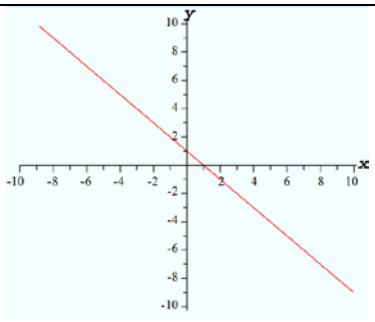
1. **The Formula for Slope of a line** when one is given any 2 points ***(1,2)*** and

(10, 8) On the line is…

$$\text{SLOPE} = \frac{rise}{run} = \frac{8-2}{10-1} = \frac{6}{9} = \frac{2}{3}$$

2. **Positive and Negative Slope**

Describe the slope in the chart below.

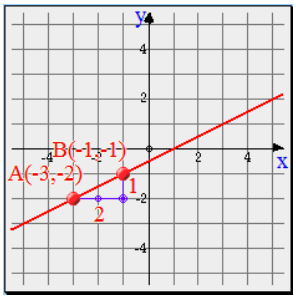
	Positive or Negative	Sketch
Rising to the Right	***positive***	
Rising to the left	***negative***	

3. **Sketch the Line when given its Slope and a Point on it**

Record examples 1 and 2, below, from this computer section.

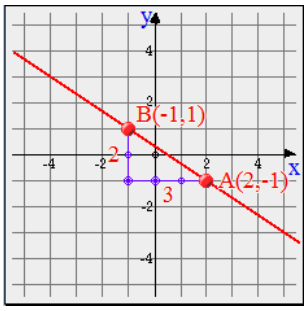
Clearly note the order of the steps taken to draw the line.

Example 1:



- ***Determine the positive slope of the line***
- ***Place point A (-3, -2) on the graph***
- ***Begin at A and move 2 units to the right and then move 1 unit up B (-1, -1)***
- ***Join A and B and extend***

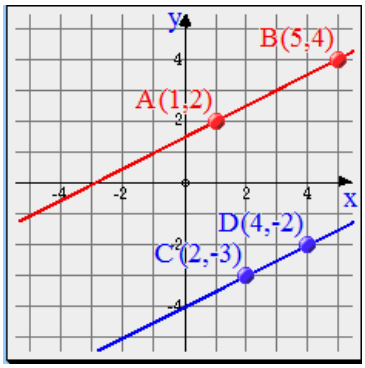
Example 2:



- ***Determine the negative slope of the line***
- ***Place point A (2, -1) on the graph***
- ***Begin at A and move 2 units to the left and then move 2 unit up B (-1, 1)***
- ***Join A and B and extend***

4. **Slopes of Parallel Lines**

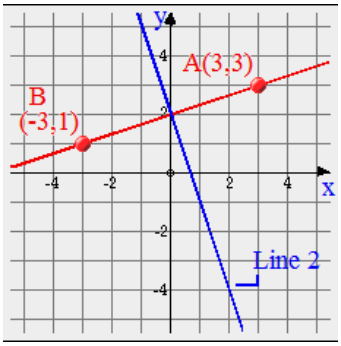
Record and *Explain* what you discovered about the slopes of parallel lines.
(Include a diagram to help you)



- ***Slope of Line 1*** ■ ***is*** ½
- ***Slope of Line 2*** ■ ***is*** ½
- ***The slopes of the parallel lines are the same.***

5. **Slopes of Perpendicular Lines**

Record and *Explain* what you discovered about the slopes of perpendicular lines.
(Include a diagram to help you)



If Line 1 ■ ***is perpendicular to Line 2*** ■***:***

- ***The lines meet at 90^o or right angles***
- ***The slopes are negative reciprocals*** $\frac{3}{1} \rightarrow \frac{1}{3} \times -1$

  $\rightarrow \frac{-1}{3}$

- ***The product of their slopes is -1*** $\frac{3}{1} \times \frac{-1}{3} = -1$