

Name: _____

Date: _____

Slope of a Line

Algebra (Grade 8)

Review:

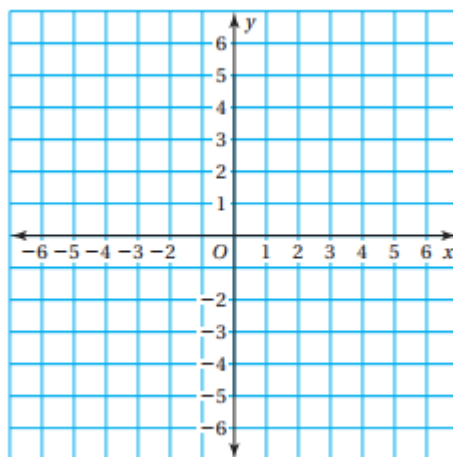
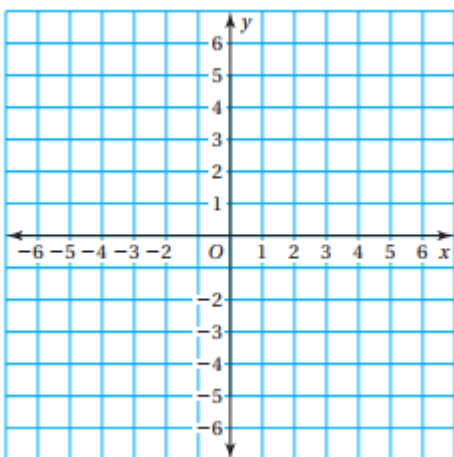
PRECISION Copy and complete the table. Plot the two solution points and draw a line *exactly* through the two points. Find a different solution point on the line.

3.

| | | |
|--------------|--|--|
| x | | |
| $y = 3x - 1$ | | |

4.

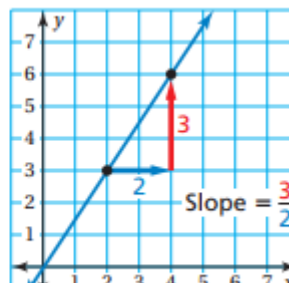
| | | |
|------------------------|--|--|
| x | | |
| $y = \frac{1}{3}x + 2$ | | |



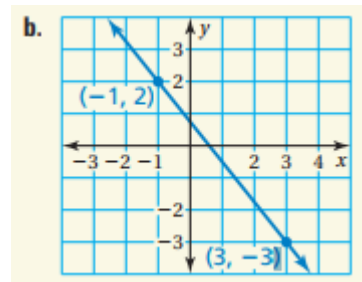
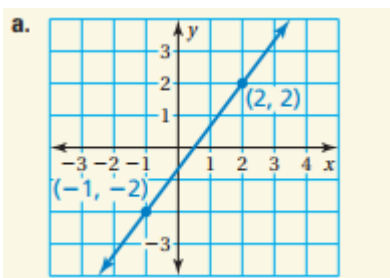
Slope is the rate of change between any two points on a line. It is the measure of the *steepness* of the line.

To find the slope of a line, find the ratio of the **change in y** (vertical change) to the **change in x** (horizontal change).

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x}$$

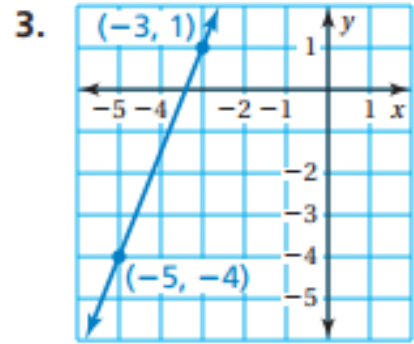
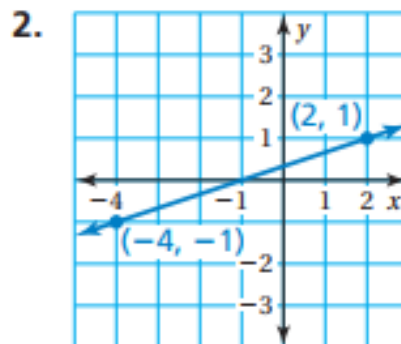
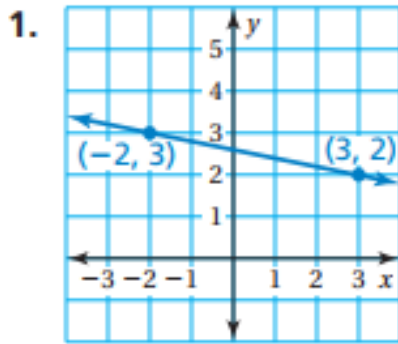


Exercise #1: Find the slope of each line below. Also state whether the slope is positive or negative.



Exercise #2:

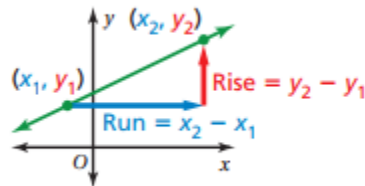
Find the slope of the line.



Even without a graph we can still calculate the **slope** between two points

Slope

The **slope** m of a line is a ratio of the change in y (the **rise**) to the change in x (the **run**) between any two points, (x_1, y_1) and (x_2, y_2) , on the line.



$$m = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

Exercise #3: Without a graph calculate the slope of the line that will pass through the two points given.

- a) $(2, 3)$ and $(4, 9)$ b) $(-3, 2)$ and $(1, 10)$ c) $(-1, 2)$ and $(5, -1)$ d) $(3, -4)$ and $(1, 1)$

Exercise #4: Find the slope of the horizontal and vertical lines in the following graphs:

