

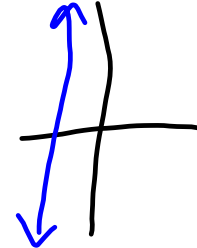
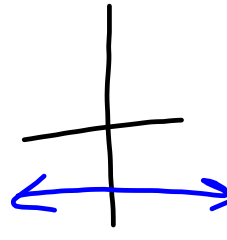
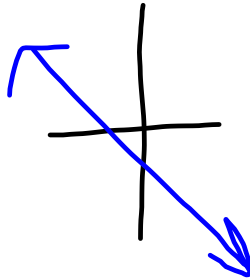
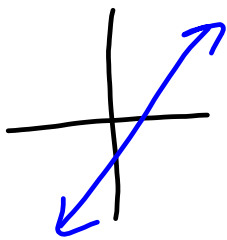
Draw an example of positive, negative, zero, and undefined slope.

Positive

Negative

Zero

Undefined



Finish Test

~~A~~ Define the Line wkst

Missing Work?

Extra Credit Sheets

Homework Questions?

On the top of your paper (by your name) rate yourself for this section:

4 - I can summarize the concepts and explain it to others

3 - I can apply the concept to answer questions correctly

2 - I can apply the concepts but with some mistakes

1 - I need help and know how to apply the concept

0 - I can't apply the concept, even with help

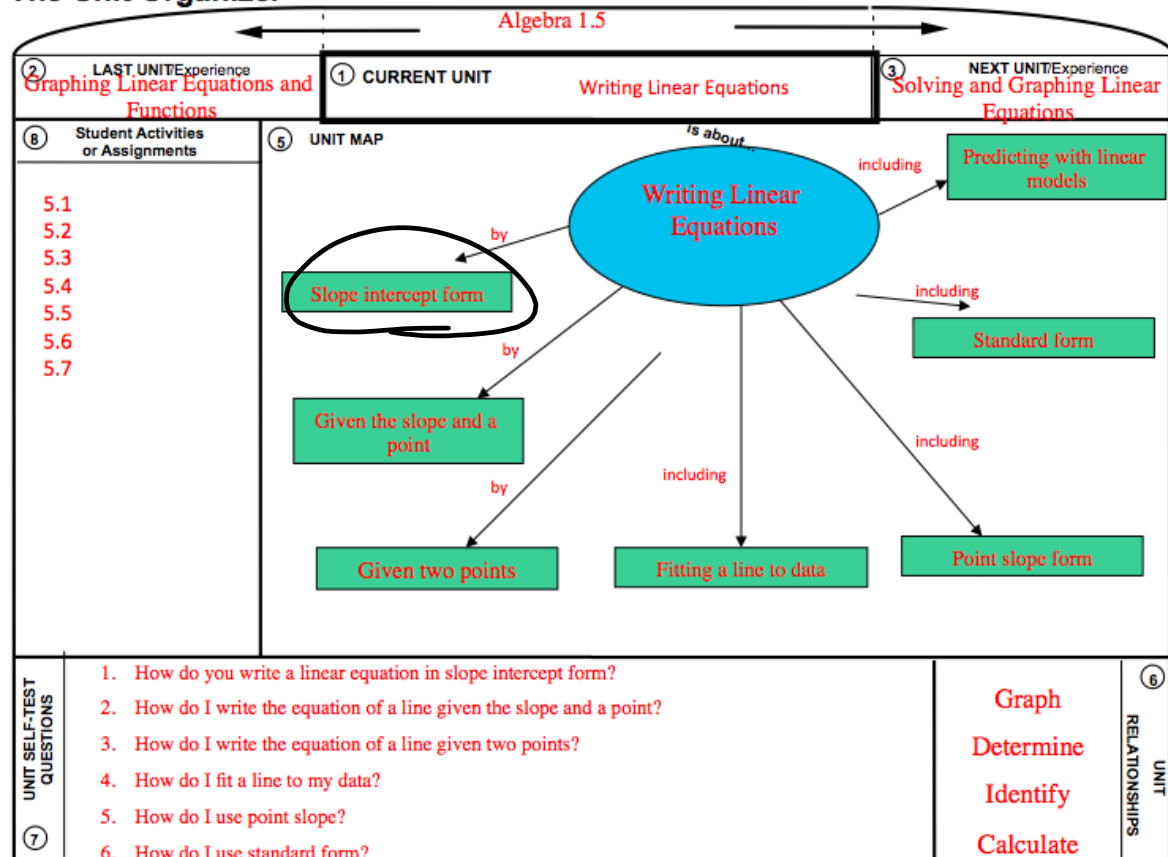
Rating of 0-2 is a warning signal to me that you need help

5.1 Writing Linear Equations in Slope-Intercept Form

Goal: • Use the slope-intercept form to write an equation of a line.

EQ: What is the name of an equation in the form $y = mx + b$ and what parts can you identify?

The Unit Organizer



Vocabulary

Slope-intercept form:

$$y = mx + b$$

per each (rate of change)

slope

y-int

(beginning amt)

$$\frac{y-y}{x-x} \quad \left(\frac{\text{rise}}{\text{run}} \right)$$

Example 1: Writing an Equation of a Line

Write an equation of the line whose slope **m** is 4 and whose y-intercept **b** is -3.

$$y = m x + b$$

$$y = 4x - 3$$

Try It

Write an equation of the line in slope-intercept form.

a) Slope: 3

y-intercept: 7

$$y = 3x + 7$$

b) Slope: -5

y-intercept: -1

$$y = -5x + -1$$

$$y = -5x - 1$$

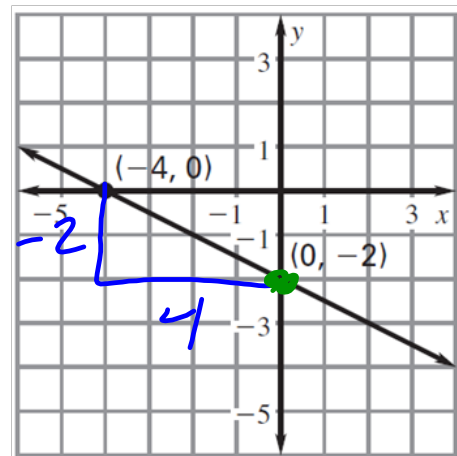
Example 2: Writing an Equation of a Line from a Graph

a) Write an equation of the line shown in the graph.

$$m = \frac{-2}{4} = \left(-\frac{1}{2}\right)$$

$$b = -2$$

$$y = -\frac{1}{2}x - 2$$



Example

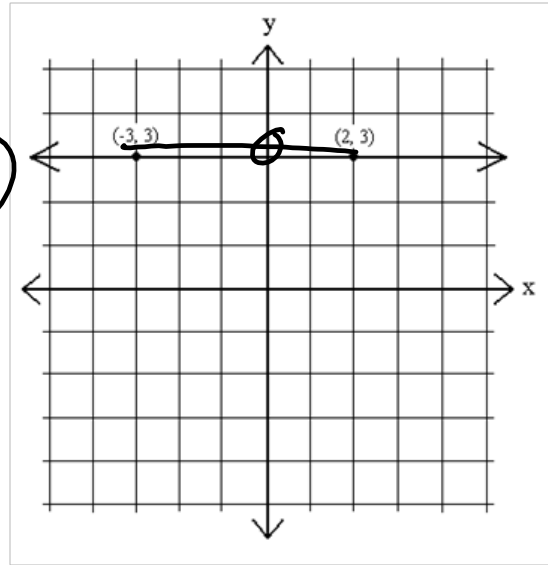
b) Write an equation of the line shown in the graph.

$$m = \frac{0}{3} = 0$$

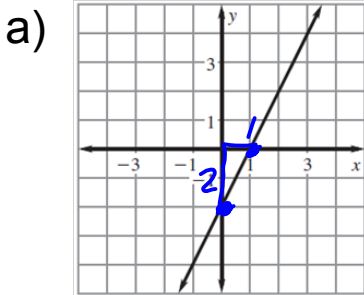
$$b = 3$$

$$y = 0x + 3$$

$$y = 3$$

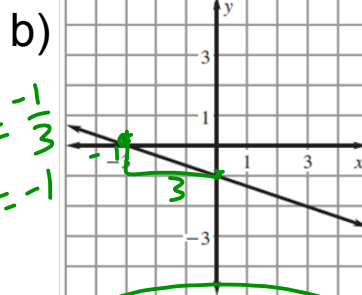
**Try It**

Write an equation of the line shown in the graph.



$$m = \frac{2}{1} \quad b = -2$$

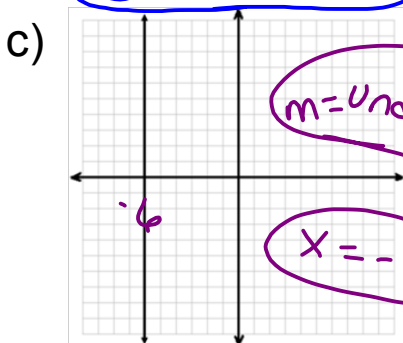
$$y = 2x + -2$$



$$m = -\frac{1}{3}$$

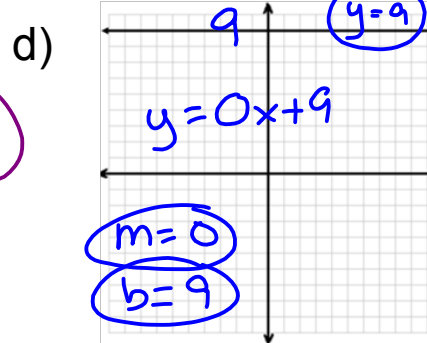
$$b = -1$$

$$y = -\frac{1}{3}x - 1$$



$$m = \text{undefined}$$

$$x = -6$$



$$y = 0x + 9$$

$$m = 0$$

$$b = 9$$

In chapter 4 you saw examples of linear functions.

$$f(x) = mx + b$$

A *linear model* is a linear function that is used to model real-life situations.

The slope, m , is the rate of change ^(per, each).

The y-intercept, b , is the beginning amount _(initial value).

Example Linear functions can approximate population change.

a) Write a linear equation to approximate the expected population of California in any year between 1990 and 2005. Use the information below.

California had a population of about 29.76 million. During the next 15 years, the state's population was expected to increase by an average of about 0.31 million people per year.

b) Use the equation to predict the population of California in 2005.

Try It

1. The membership to your local video store is \$10 per year and the DVD rental rate is \$3.95 per DVD. Write an equation that models the total amount of money you will spend on DVD rentals this year.

Suppose you rent 17 DVD's this year. How much money will you have spent on DVD rentals?

2. Your fastest 50 yd swim in your freshmen year was 30 seconds. After each year, you are able to take a second off your time. Write an equation that models the situation.

How fast are you after your senior year?

Summary

EQ: What is the name of an equation in the form $y = mx + b$ and what parts can you identify?

5.1 Homework

Define the Line wkst &

5.1 Practice B wkst #1-18