Problem of the Day: Find the slope of the line passing through (2, -7) and (2, 2).

Plan for the Day: Get new weekly homework

Finish yesterday's notes

Finish puzzle from Wednesday

Objective: We will be able to solve problems with

direct variation.

Today is National Chocolate Cupcake Day and

National Legging Day!!

A direct variation is a relationship that can be written in the form y = kx.

k is the constant of proportionality (or variation).

The constant of proportionality acts the same as the slope. It represents the scale factor of a proportion.

23



16

If a direct variation exists, it is worded as "y varies directly with x", which means as one value increases, so does the other value.

To find your k, divide the y value by the x value.

Once you have your k, you can write an equation in direct variation by plugging it into y = kx.

We can use an equation of a direct variation to help us predict or find given values.

To find a given value, write the equation and then plug the given values in for the appropriate variables.

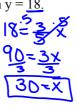
You can also use a proportion to find the given values.

Example: For the following examples, y varies directly as x. Write a direct variation equation that relates x and y. Then solve.

a. If y = 6 when x = 10, find x when y = 18







Example: For the following examples, y varies directly as x. Write a direct variation equation that relates x and y. Then solve.

b. If y = 22 when x = 8, find y when x = -16.

Example: The mass of a substance varies directly with the volume of the substance. The volume of 50 kilograms is 40 liters. What is the volume, in liters, of 6.5 kilograms?

Example: The value of y varies directly with x. Write a function that represents the relationship between x and y if y = 20/3 when x = 30.