Slope (Rate of Change) Notes

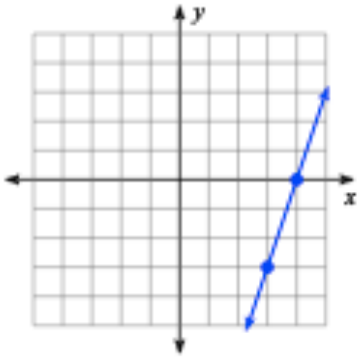
The *slope* or *rate of change* of a line or linear scenario tells us the change in the dependent variable each time the independent variable increases by one.

On a graph or in a table, we think of the slope (m) as the $\frac{rise}{run}$, which is the $\frac{change\ in\ y}{change\ in\ x}$. We calculate change by subtracting, so the formula you will see for slope at times is $\frac{y_2-y_1}{x_2-x_1}$ or $\frac{y_1-y_2}{x_1-x_2}$.

Let's see this in action.

Calculate the slope of the lines in the graphs. Show the work in more than one way.

B)

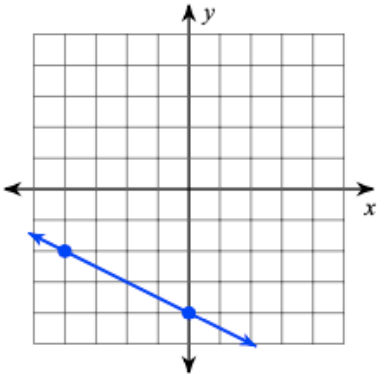


Slope (rate of change):_____

(see start of work on graph)
Work:

Explanation:

A)



Slope (rate of change):_____

(see start of work on graph)
Work:

Explanation:

Calculate the slopes of the lines represented by the point in the tables. Show the work in more than one way.

C)

x	y
4	-13
-3	8
12	-37
-11	32

Slope (rate of change):_____
Work:

Explanation:

D)

x	**y**
2	8
6	10
-4	5
14	14

Slope (rate of change):_____
Work:

Explanation:

For **E** and **F**, identify the slope (rate of change) in the word problem. Note: you won't actually be modeling the situation here, but the context gives you a better idea of whether your slope should be positive or negative.

E) Jaysen spends $45 on supplies to make cookies, and plans to sell the cookies for $1.50 each. Write an equation to model Jaysen's profit.

IQ and units: _____

DQ and units: _____

Slope (rate of change):_____

F) Augwenda is 700 miles from home and is driving home at an average rate of 50 miles per hour. Write an equation to model Augwenda's distance from home.

IQ and units: _____

DQ and units: _____

Slope (rate of change):_____