Slope from a Table

Essential Question: How do I find slope from a table?

Agenda

Warm-Up
Notes
(Slope Book)
Homework

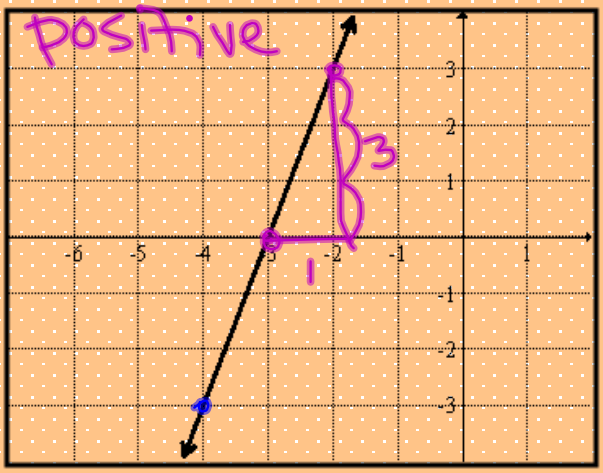
Reminders

All HW due by 4:15PM
Test Corrections due by TUESDAY 4:15PM

Turn in bathroom passes!!!
Make sure your name is legible. Due Wednesday

Warm-Up Monday

Given the following graph, find the slope.



$m = \frac{RISE}{RUN}$

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

Fill in a table with three perfect points from the graph

x	y
-4	-3
-3	0
-2	3

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

Is there a way to get the slope from the table instead of the graph?

SLOPE

RATE of CHANGE

m

My Definition

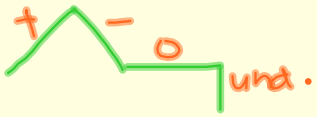
Slope is a ratio (FRACTION) compares RISE (vertical change) to RUN (horizontal change)

Characteristics

$m = \frac{RISE}{RUN}$

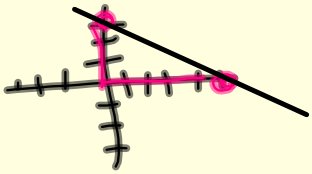
$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

HOY VUX



Example

Use for lines



use straight edge to connect.

non-Example

we can only use for straight lines

NO SLOPE

NO SLOPE

x	y
-1	2
0	4
1	5

+1 < > +2

+1 < > +1

NO SLOPE

Essential Question: How do I find slope from a table?

Finding Slope...

1. An electronics company has several factories that make stereos. Each factory produces the stereos at a steady pace throughout the day.

A. Over a period of 8 hours, factory A produces 400 stereos. Complete the table.

$\frac{400}{8} = 50$ (400 ← y, 8 ← x)

50 stereos per hour

Time (H) x	1	2	3	4	5	6	7	8
Stereos Produced y	50	100	150	200	250	300	350	400

B. Over a period of 6 hours, factory B produces 360 stereos. Complete the table.

$\frac{360}{6} = 60$

60 stereos per hour

Time (H)	1	2	3	4	5	6	7	8
Stereos Produced	60	120	180	240	300	360	420	480

C. How many stereos does each factory produce per hour?

$m = \frac{\Delta y}{\Delta x}$

"change in y divided by change in x"

change = Δ

"delta"

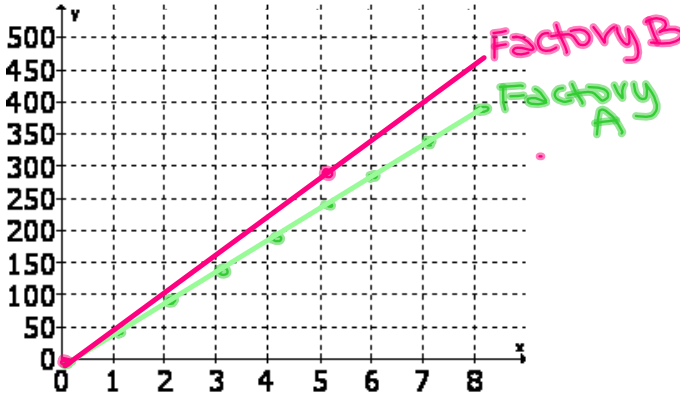
REVIEW

D. Graph a linear function for each of the factories on the coordinate plane.

E. From the table and graph find the domain and range of each factory.

Domain: A: $0 \le x \le 8$
B: $0 \le x \le 8$

Range: A: $0 \le y \le 400$
B: $0 \le y \le 480$



F. How would a graph for factory C, which produces 75 stereos per hour, compare to the other two factories' graphs?

Steeper slope

SLOPE= $\frac{\text{RISE}}{\text{RUN}} = \frac{\Delta y}{\Delta x}$

Leave slopes as (improper) fractions

FIND THE SLOPE OF THE FOLLOWING:

2.

x	0	4	8
y	1	4	7

+4 +4

+3 +3

$m = \frac{\Delta y}{\Delta x} = \frac{3}{4} = \boxed{\frac{3}{4}}$

3.

x	y
1	3.75
2	5
3	6.25
4	7.50
5	8.75

+1 +1 +1 +1

+1.25 +1.25 +1.25 +1.25

$m = \frac{1.25}{1} = \boxed{\frac{5}{4}}$

Top # ÷ Bottom #

MATH ⇒ frac

enter

enter

4.

x	y
-3	10
0	8
6	4
18	-4

+3 +6 +12

-2 -4 -8

$m = \frac{-4}{6} = \boxed{\frac{-2}{3}}$

5.

x	y
-3	5
0	5
3	5
6	5

+3 +3 +3

+0 +0 +0

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

HOY VUX

horizontal

6.

x	-2	-2	-2
y	1	4	7

+0 +0

+3 +3

$m = \frac{3}{0} = \boxed{\text{Undefined}}$

$\frac{N}{0}$ ∄

...from a table

7. On the second day, Oscar had 200 pages of his book left to read, while on the fourth day he had 150 pages left. Complete the table, including what the independent and dependent variables represent in this situation. Find the slope and tell what it represents in this situation.

ind. x	dep. y
days	pages left
2	200
4	150

+2 -50

$\frac{y}{x}$ $m = \frac{-50}{2} = \frac{-25}{1}$ ← pages ← days

Oscar reads 25 pages every day.

Quiz Wednesday

Algebra I - Unit 3

Practice – Slope from a Table pp 320-325

Name _____ Date _____ Period _____

Find the rate of change on the following tables.

1.

x	y
1	4
2	2
3	0
4	-2

_____

2.

x	-2	1	5	7
y	34	37	41	43

_____

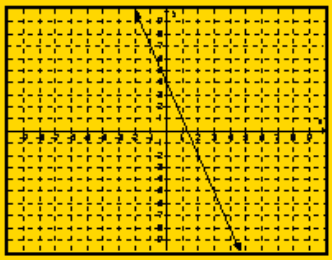
3.

x	y
-3	6
3	-2
6	-6
12	-14

_____

4. Given the following graphs, make a table of values and find the rate of change.

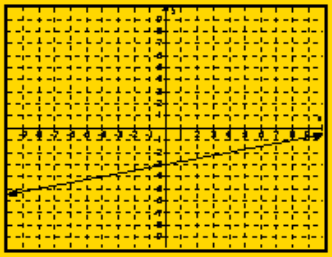
a.



x	y

_____

b.



x	y

_____

5. Given the two points, (-2, -1) and (4, 2), make a table and determine the slope.

6. In two hours a bus travels 100 miles while in three hours a bus travels 150 miles. Fill in the table, including what the independent and dependent variables are for this situation. Find the slope and explain what it represents for this situation.

x y

_____

_____

Algebra I - Unit 3

7. Which of the following tables best represent a linear function with a rate of change of $\frac{3}{4}$?

A

x	y
-3	-4
0	0
3	4

B

x	y
1	2.50
3	4
4	4.75

C

x	y
0	1.75
6	9.75
9	13.75

D

x	y
-4	1
0	-2
4	-5

8. Determine the slope from the table.

Time (seconds)	3	21	30	42
Number of letters texted	2	14	20	28

9. Create a table with a rate of change of $\frac{1}{2}$.

10. Which of the following tables has a slope of $\frac{-4}{5}$?

A B

x	y
-6	7.5
-4	5
-2	2.5
6	-7.5
10	-12.5

C

x	y
-6	-4.8
-2	-1.6
4	3.2
10	8
12	9.6

D

x	y
-3	-3.75
-1	-1.25
5	6.25
10	12.5
14	17.5

x	y
-5	4
-1	0.8
4	-3.2
11	-8.8
13	-10.4

Homework Check:

Slope from Tables

Answers:

1. $m = -2$
2. $m = 1$
3. $m = \frac{-4}{3}$
4. a. $m = -3$ possible table

x	y
0	4
1	1
2	-2

b. $m = \frac{1}{4}$ possible table

x	y
0	-3
4	-2
8	-1

5. $m = \frac{1}{2}$
6.

x hours	y miles
2	100
3	150

Independent Variable: number of hours
Dependent Variable: number of miles

Slope $= \frac{50}{1} = 50$ miles per hour

7. B
8. $m = \frac{2}{3}$
9. Answers will vary; possible answer

x	y
0	1
2	2
4	3
6	4

10. D