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Warmup 9/(22 + 10 ÷ 2)

Find the slope of each line. If it is hard to count the squares from where you're sitting, use the red numbers to help you.

1) Blue line 2) Green line 3) Purple line 4) Yellow Line



• If the slope is something like $\frac{0}{7}$, you can't leave it like that. You <u>must</u> simplify it to just **0**.

• Similarly, if the slope is something like $\frac{-4}{0}$, you <u>must</u> write "undefined."

Comparing Slopes...



On a NORMAL graph: (scaled by 1's)

• Slope = 1: "Halfway" steep



Slope >1: Pretty steep

MORE WARMUPS

- Number your warmup paper from 5 to 12.
- 5) 4 7 3
- 6) **77 81** –**4**
- 7) -3 10 -13
- 8) -6 6 -**12**
- 9) 5 (-4) 9
- 10) 17 (-16) 33
- 11) -30 (-2) -28
- **12) 10** (-18) **8**

Check HW

Table of Contents

- p. 1 Converting Fractions and Decimals (1.1)
- p. 2 Roots (1.8 & 1.9)
- p. 3 Solving x² and x³ Equations (1.8)
- p. 4 Rational vs. Irrational (1.1)
- p. 5 What is a function?
- p. 6 Function Notation: f(x)
- p. 7 Linear vs. Nonlinear Functions
- p. 8 Constant Rate of Change
- p. 9 Slope

<u>Slope</u>

Objectives:

-Be able to find the slope of a line on a graph (Already done)

-Be able to find the slope between two points WITHOUT USING A GRAPH!

9

How many words per minute?

Min	Words
0	48
4	60
8	72
12	84
16	98
	12

Rate of Change $=\frac{12}{4}=3$

12 words every 4 minutes

3 words per minute

Slope?

 $m=\frac{2}{1}=2$

X	0	1	2	3	4
У	-6	-4	-2	0	2

X	0	3	6	9	12
У	27	21	15	9	3

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

How do I get the slope?

• Between points (3, 2) and (5, 10)



How do I get the slope?

• Between points (-4, 8) and (2, 6)



Formula for slope WITHOUT a graph:

- You can get the <u>change in y</u> by subtracting the ycoordinates.
- You can get the <u>change in x</u> by subtracting the xcoordinates.
- The slope between $(x_{1,} y_{1})$ and (x_{2}, y_{2}) is: $m = \frac{y_{2} - y_{1}}{x_{2} - x_{1}}$

The 2's and 1's are not exponents. They are just LABELS.

 $y_2 - y_1$ just means "the 2nd y minus the 1st y"

Common Error Alert!!!

DO NOT PUT THE X'S ON TOP.

Find the slope:

1. Between (1, 4) and (3, 9)

 $m = \frac{9-4}{3-1} = \frac{5}{2}$

2. Between (-3, -4) and (7, 1)

$$m = \frac{1 - (-4)}{7 - (-3)} = \frac{5}{10} = \frac{1}{2}$$

3. Between (-6, 2) and (-4, -10)

$$m = \frac{-10 - 2}{-4 - (-6)} = \frac{-12}{2} = -6$$

Would you get different answers?

What if I switched the order of the x's and the y's? Would it still work?

(5, 9) and (7, 3).

 $\frac{y_1 - y_2}{x_1 - x_2}$ also works. You just have to make sure you subtract the x's and y's in the same order!!!

Find the slope 2 different ways



Homework

p. 185 (1 – 8, 11, 12)