Finding Slope from a Graph

Today is Twin Thursday If you don't have your twin or a picture, you must stop by BEFORE 2:20PM to receive your bonus stamp.

Agenda

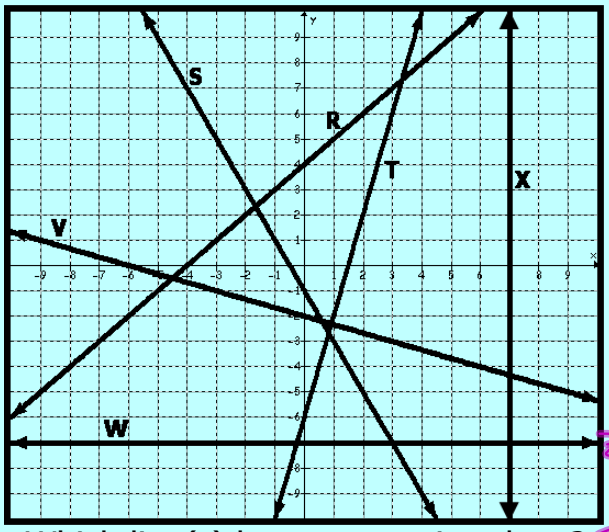
Warm-up
HW Check
Notes - Slope Book
Homework

Reminders

Extra Credit due TOMORROW by 1:30PM
All late HW (2.2-2.4) due Monday
Test Corrections due Tues 4:15PM
Quiz Wednesday (on 3rd six weeks)

Essential Question

How do I find a numerical value for the slope from a graph?



1. Which line(s) have a negative slope? S & V
2. Which line(s) have a positive slope? R & T
3. Which line(s) have an undefined slope? X
4. Which line has the steepest slope? T
5. Which line has the smallest slope, but not zero? V

zero

Algebra I - Unit 3: Topic 2 – Introduction to Slope

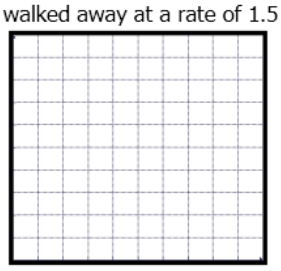
Practice – Introduction to Slope **No Textbook Correlation**

Name _____ Date _____ Period _____

Fill out the table for each scenario, label the axes, graph the situation, and identify the slope type.

1. Jose' started 2 feet away from the CBR and walked away at a rate of 1.5 ft / sec.

Time (s)	Distance from CBR (ft)
0	
1	
2	
3	



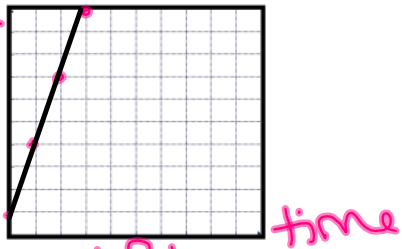
Positive, negative, zero or no slope?

_____

2. Brenna is walking away from the CBR at a rate of 3 feet per second. You missed where she started, but you know that she was at the 4 foot mark when the timer called out the 1st second.

Time (s)	Distance from CBR (ft)
0	1
1	4
2	7
3	10

+3 +3 +3



A. How far away from the CBR did Brenna start? 1 ft

B. What type of slope does this "walk" represent? positive

3. Describe the differences between Jose's and Brenna's "walk".

4. Alex was walking toward the motion detector at 2 feet per second. You missed where he started, but you know that he was at the 8 foot mark when the timer called out the 4th second.

Time (s)	Distance from CBR (ft)
0	16
1	14
2	12
3	10
4	8
5	6

−2 −2

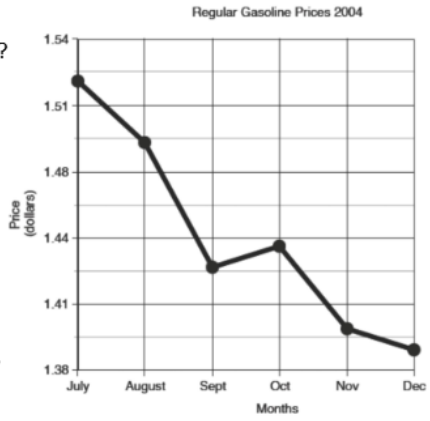
A. How far away from the CBR did Alex start? 16 ft

B. What type of slope does this "walk" represent? negative

5. Describe the difference between Brenna's and Alex's "walk".

Algebra I - Unit 3: Topic 2 – Introduction to Slope

The graph below tracks regular gasoline prices from July 2004 to December 2004. Use the graph to answer questions 6-8. Select the best answer.



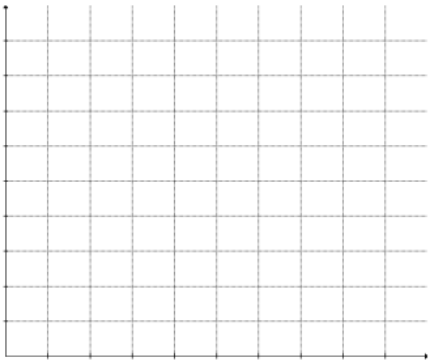
6. During which time interval did the cost decrease at the greatest rate?
   - A July to August
   - B August to September
   - C September to October
   - D October to November

7. During which time interval was the slope positive?
   - A July to August
   - B August to September
   - C September to October
   - D October to November

8. During which time interval did the cost decrease at the slowest rate?
   - A July to August
   - B August to September
   - C October to November
   - D November to December

9. Explain, using words or an example, why the slope of a vertical line is undefined.

10. On the graph to the right, sketch the following relationship.
    - Line A has a positive slope.
    - Line B has a positive slope.
    - Line B has a greater slope (rate of change) than line A.
    - {Make sure that you label the two lines.}



Essential Question How do I find a numerical value for the slope from a graph?

Finding Slope...

FIND THE SLOPE OF THE LINE CONNECTING TWO POINTS:

STEP 1: Find 2 pretty points & connect (straight edge)

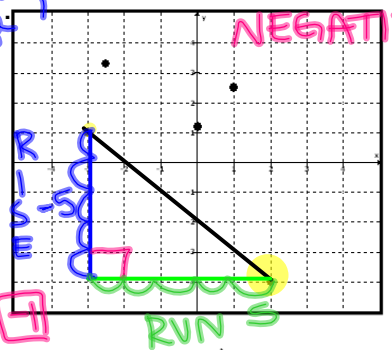
STEP 2: Make a right angle w/ the points

STEP 3: Is the slope negative or positive?

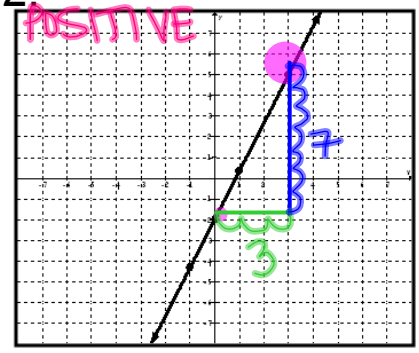
Find RISE: -5 (UP/DOWN) Down-neg.

Find RUN: 5 (RIGHT)

STEP 4: Write as $\frac{\text{RISE VALUE}}{\text{RUN VALUE}} = \frac{-5}{5} \div 5 = \frac{-1}{1} = -1$



2.

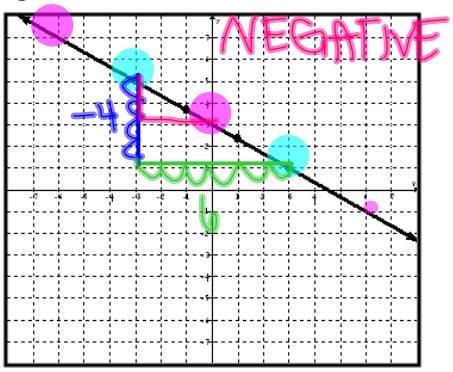


Perfect Points: A point located at the intersection of two integer (whole #) gridlines.

"pretty points"

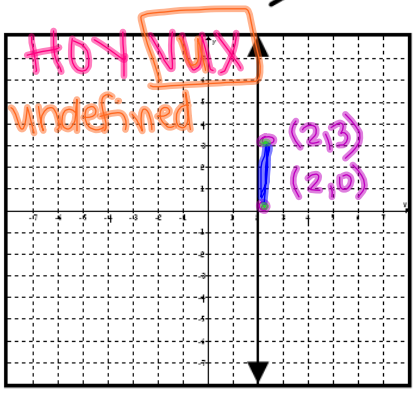
$m = \frac{rise}{run} = \frac{+7}{3} = \frac{7}{3}$ Rate of change = SLOPE = m=

3.



$m = \frac{rise}{run} = \frac{-4 \div 2}{6 \div 2} = \frac{-2}{3}$

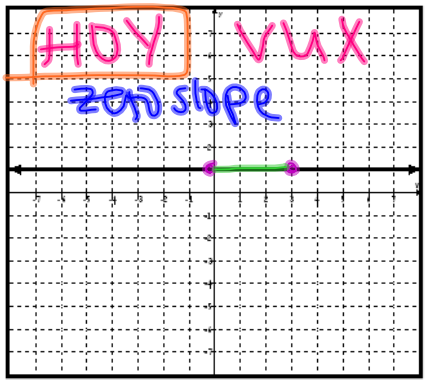
4.



$m = \frac{rise}{run} = \frac{3}{0}$ = undefined

$\frac{N}{\emptyset}$ $\frac{\sqrt{0}}{K} = 0$

5.

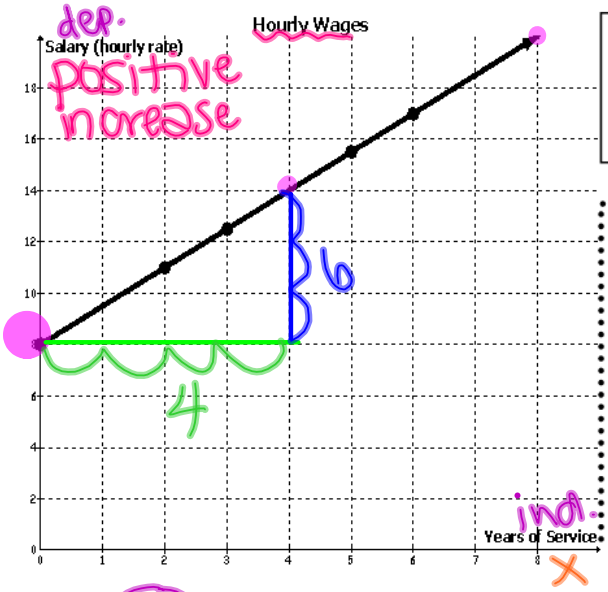


$$m = \frac{rise}{run} = \frac{0}{3} = 0$$

6. a) Find the slope of the line

WATCH AXIS SCALE

b) Describe what the slope means in this situation



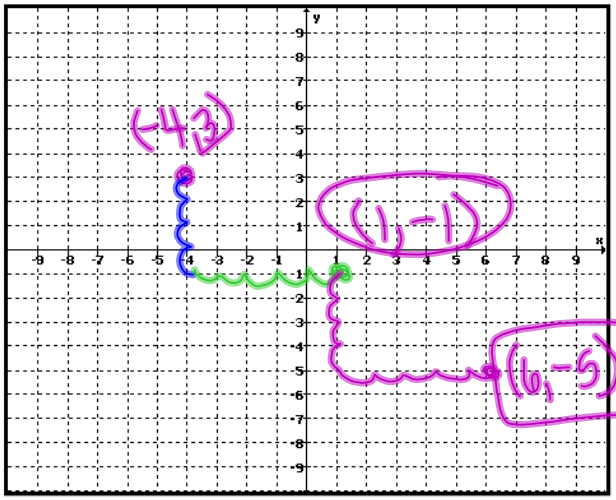
$$m = \frac{rise}{run} = \frac{6 \div 2}{4 \div 2} = \frac{3}{2}$$

3 ← salary
2 ← years of service

Means: For every 2 RUN years of service, hourly salary increases by $3 RISE

independent
dependent
type of slope

7. Find two points given a point and a slope. (-4,3)



$$m = -\frac{4}{5}$$

$m = \frac{-4}{5}$

Rise: -4
DOWN 4
Run: 5
RIGHT 5

1) Plot point
2) To find next point:
Rise: up/down
Run: Right
3) Negatives go numerator

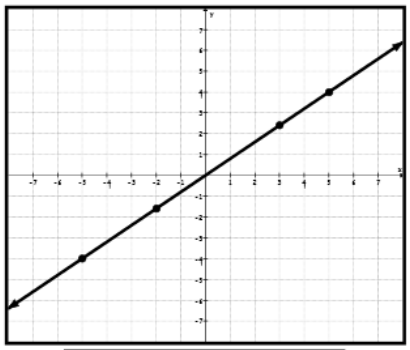
Don't forget the last page

Algebra 1 – Unit 3: Topic 2 – Slope from a Graph

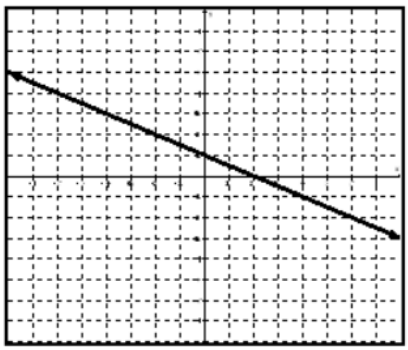
Practice – Slope from a Graph **pp 310-313**

Name _____ Date _____ Period _____

Find the slope of each line pictured below.

1. 

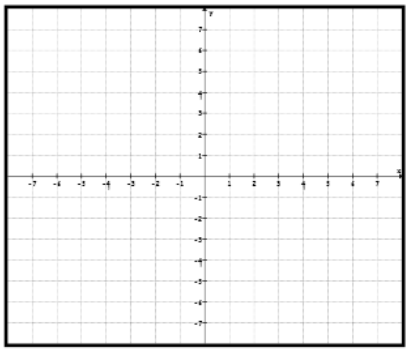
$m = \frac{rise}{run} =$ _____

2. 

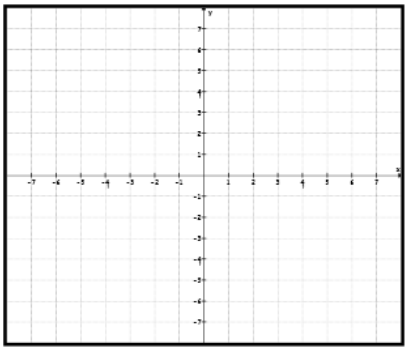
$m = \frac{rise}{run} =$ _____

Draw a line that has the indicated slope.

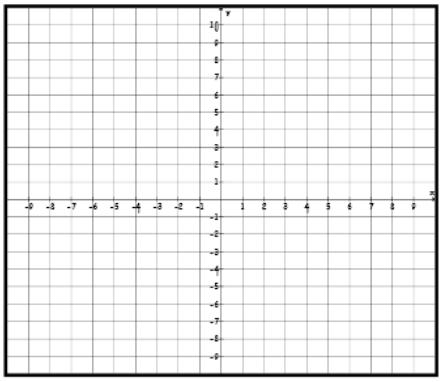
3. An undefined slope.



4. A zero slope.



Using the graph to the right, find two more points given a point and the slope.



5. $(0,5)$ and $\frac{-4}{3}$

_____ _____

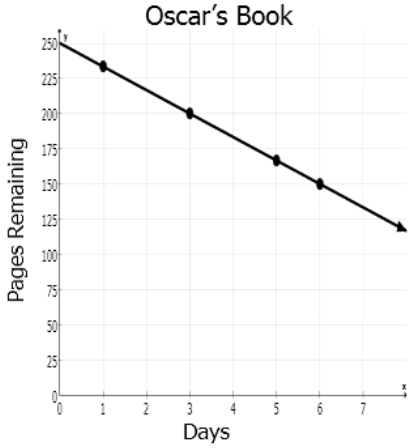
6. $(1,6)$ and -4

_____ _____

Algebra I – Unit 3: Topic 2 – Slope from a Graph

Find the slope of each line. Then state the meaning of the slope in this situation.

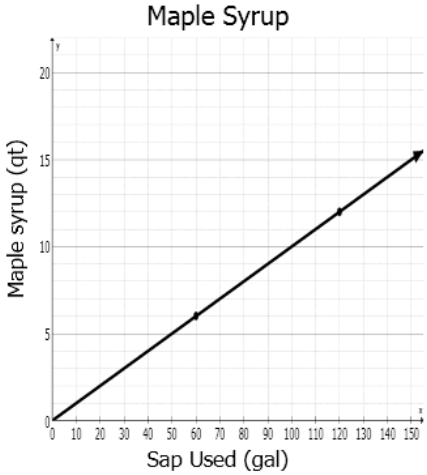
7.



$m = \frac{rise}{run} =$ ---------

Meaning:_____

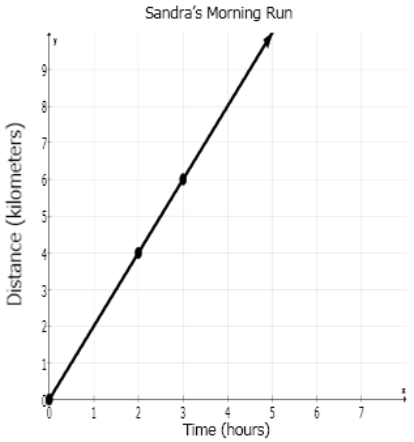
8.



$m = \frac{rise}{run} =$ ---------

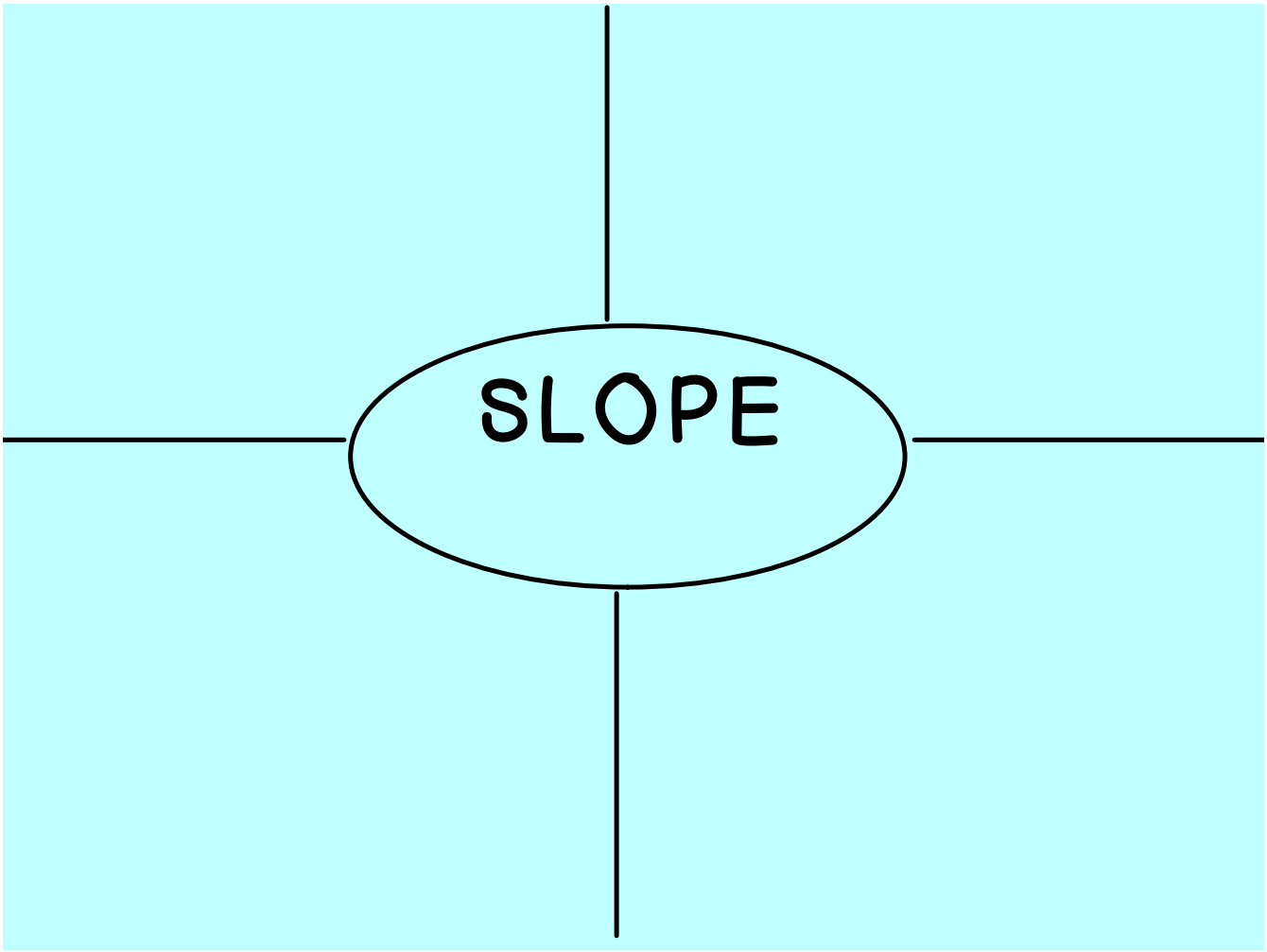
Meaning:_____

9.



$m = \frac{rise}{run} =$ ---------

Meaning:_____


SLOPE

Finding Slope from a Graph

Homework Check

1. 4/5
2. -1/2
3. A vertical line
4. A horizontal line
5. 5. (3, 1), (-3, 9), (6, -3), (9, 7) are possible answers.
6. (2, 2), (3, -2), (4, -6), (0, 10) are possible answers.
7. m=-50/3, meaning: Oscar reads 50 pages every 3 days
8. m=1/10, meaning: 10 gallons of sap makes 1 quart of maple syrup.
9. m=2, meaning: Sandra runs 2 kilometers every hour

Tomorrow is Spirit Friday! Show your Purple & Gold!