

Algebra I
Review
5.1-5.3

NAME: _____
DATE: _____ HOUR: _____

You may use a calculator on the quiz.

Part I. Definition of Slope.

A. Define "slope" 3 different ways:

- 1.
- 2.
- 3.

B. Draw a line with the following slopes:

- 1.
- 2.
- 3.
- 4.

positive slope

negative slope

slope of zero

no slope

C. What is the formula for the slope of the line between the points (x_1, y_1) and (x_2, y_2) ?

$$m = \underline{\hspace{2cm}}$$

D. Find the slope between the two points. Simplify and reduce all fractions.

1. $(-3, 5)$ and $(7, 6)$ _____
2. $(-1, 1)$ and $(-3, -3)$ _____
3. $(0, 2)$ and $(3, 0)$ _____
4. $(-3, 1)$ and $(2, 6)$ _____
5. $(3, 5)$ and $(-2, -6)$ _____
6. $(10, 4)$ and $(7, 4)$ _____

E. Find the slope for each of the given lines. Simplify and reduce all fractions.

1. rise 8, run 4 _____

4. rise 7, run 14 _____

2. rise 12, run -10 _____

5. rise -1, run 7 _____

3. rise -1, run -3 _____

6. rise 10, run -10 _____

Part II. Definition of an intercept.

A. Describe a "y-intercept" 2 different ways.

B. Describe an "x-intercept" 2 different ways.

1.

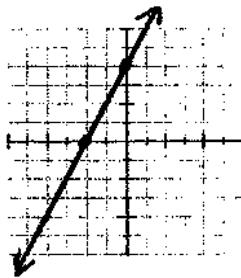
1.

2.

2.

Part III. Identify the x and y intercepts for each line.

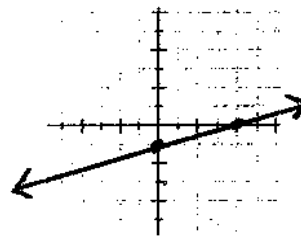
A.



x-intercept _____

y-intercept _____

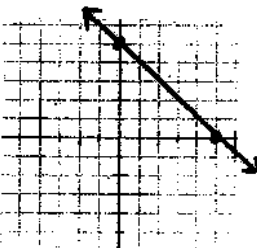
B.



x-intercept _____

y-intercept _____

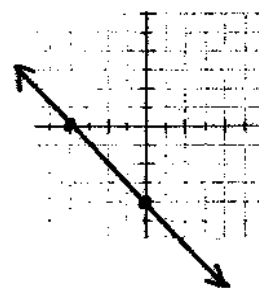
C.



x-intercept _____

y-intercept _____

D.



x-intercept _____

y-intercept _____

Part IV. Linear Functions

A. Definition of a function: every input has exactly one _____.

B. Which type of line is NOT a function? _____

Vocabulary

Match each definition or description to its corresponding term.

- | | | |
|-------|--|------------------------------|
| _____ | 1. comparison of two quantities written as $a : b$ or as a fraction | a. unit rate |
| _____ | 2. describes a line that slants upward from left to right | b. slope |
| _____ | 3. difference in x -coordinates when computing slope | c. vertical change (rise) |
| _____ | 4. ratio of vertical change, to horizontal change, of a line | d. horizontal change (run) |
| _____ | 5. a rate per one unit | e. rate of change |
| _____ | 6. describes a line that slants downward from left to right | f. ratio |
| _____ | 7. difference in y -coordinates when computing slope | g. positive slope |
| _____ | 8. ratio comparing amount of change in dependent variable with amount of change in independent variable in a real-life situation | h. negative slope |

Problem Set

Calculate each unit rate. Write each rate as a fraction.

9. It costs \$2.24 to mail a package that weighs 16 ounces. Calculate the cost per ounce.
10. It costs \$3.95 for 5 pounds of bananas. Calculate the cost per pound.
11. It takes 5 hours to travel 260 miles. Calculate the miles traveled each hour.

Determine the y -intercept of the graph of each equation.

Determine the x -intercept of the graph of each equation. **Show all your work.**

1. $y = 3x - 6$

2. $y = 2x + 8$

3. $3x + 5y = 15$

4. $6x - 2y = 30$

Problem Set

Write a linear equation to model each situation.

5. A carpenter charges a \$75 flat fee plus \$50 per hour. Write an equation to represent the cost, c , to hire the carpenter for h hours.
6. Marsha has \$125 now and plans to save \$35 per week. Write an equation to represent the amount, s , that Marsha will have saved after w weeks.
7. Raul and his friends rent a sailboat for \$15 per hour plus a basic fee of \$50. Write an equation that gives the total cost, c , to rent the boat for h hours.
8. Gail orders CDs for \$8 each plus a total shipping cost of \$5. Write an equation that gives the total price, p , of her order if she orders n CDs.
9. A teacher starts the year with \$600 for art supplies. He plans to spend \$40 per week on supplies. Write an equation to show the amount, d , that the teacher has left after w weeks.
10. Are the equations you wrote in questions 5-9 linear functions? Explain your reasoning.