Algebra I
Ch. 5 Review

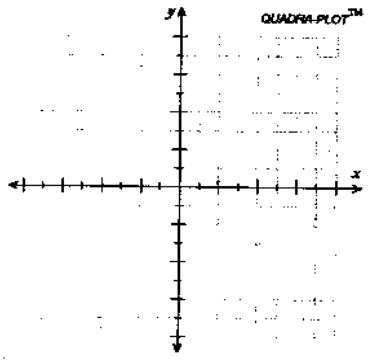
NAME:_____
DATE:_____ HOUR:____

1. Identify the slope and y-intercepts of the following equations then graph each line.

a. $y = 3x + 1$

slope = _____

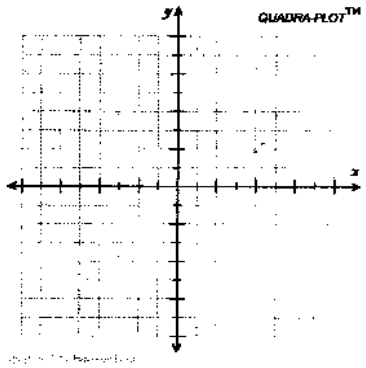
y-intercept = _____



b. $y = -\frac{1}{2}x + 3$

slope = _____

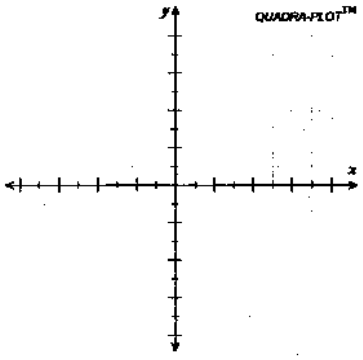
y-intercept = _____



c. $y = -2x - 3$

slope = _____

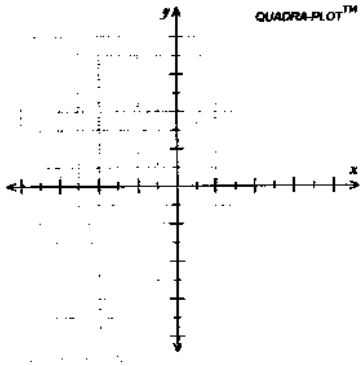
y-intercept = _____



d. $y = \frac{3}{4}x - 5$

slope = _____

y-intercept = _____

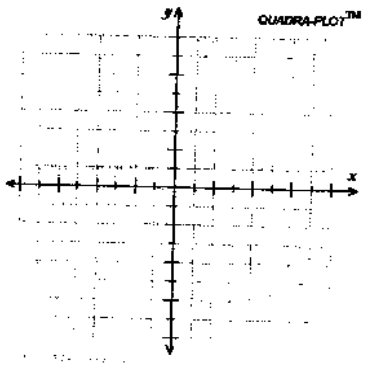


2. Use <u>algebra</u> to find the x- and y-intercepts of the following equations then graph each line.

a. $4x + 2y = 8$

x-intercept

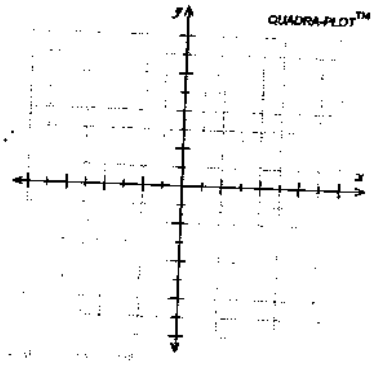
y-intercept



b. $-3x - 4y = 12$

x-intercept

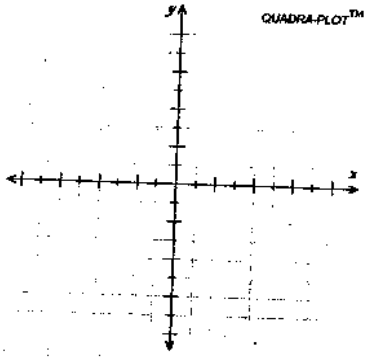
y-intercept



c. $y = \frac{1}{2}x - 1$

x-intercept

y-intercept



3. Use the following information to write a <u>point-slope</u> and a <u>slope-intercept</u> equation for each.

a. a line that contains the points (-3, 5) and (2, 4)

Point-slope _____

Slope-Intercept _____

b. a line that contains the points (5, 4) and (0, -1)

Point-slope _____

Slope-Intercept _____

c. a line that has a slope of 3 and passes through the point (4, -2)

Point-slope _____

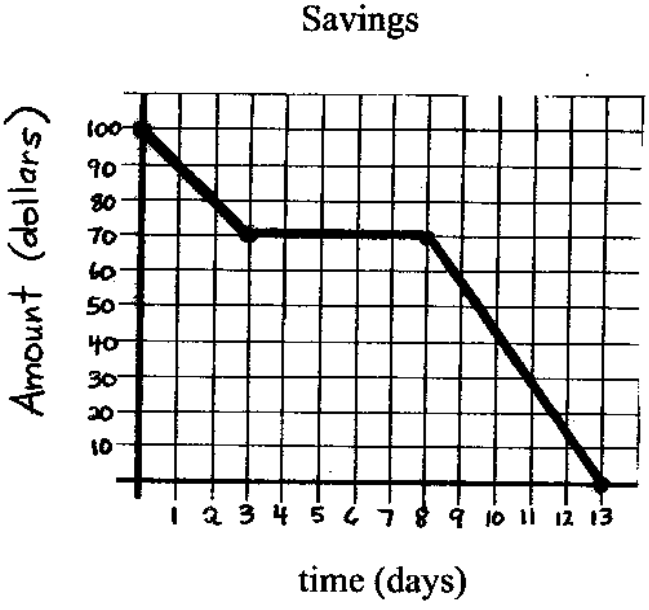
Slope-Intercept _____

d. a line that has a slope of -1 and passes through the point (5, 4)

Point-slope _____

Slope-Intercept _____

4. Write the definition of the piecewise function.



$$f(x) = \begin{cases} \_\_\_, & \_\_\_ \le x \le \_\_\_ \\ \_\_\_, & \_\_\_ \le x \le \_\_\_ \\ \_\_\_, & \_\_\_ \le x \le \_\_\_ \end{cases}$$

5. Write the following equations in <u>standard form</u>.

a. $y = -2x + 7$ b. $y - 7 = 2(x + 4)$ c. $y = 3x - 9$

_____ _____ _____

6. Write the following equations in <u>slope-intercept form</u>.

a. $8x + y = 17$ b. $y + 1 = 2(x + 4)$ c. $4x + 2y = 8$

_____ _____ _____

7. Write the equation for simple interest then solve the equation for the number of years t.

$I =$ _____ $t =$ _____

8. How much interest would I earn if I put \$3000 into an account with 4% interest for 2 years?

9. How many years would it take to earn \$140 in interest from an account I started with \$1000 that received 3.5% interest?

10. You want to save up for spring break. You currently have $120 and you will be adding $25 a week to your savings. Let y represent your total savings and let x represent the number of weeks you will save.

a. Write an equation for the amount of savings, y, you will have after x weeks.

y =

b. Use your equation to find the number of weeks it will take to save $520. Show your work.

c. Use your equation to find the amount of savings you will have after 15 weeks. Show your work.

11. You are planning a night out with friends. The restaurant you are going to charges $3 for a burger and $2 for a milkshake. Let x represent burgers and let y represent milkshakes. You have $12 to spend.

a. Write a standard form equation to represent the problem situation.

_____ x + _____ y = _____

b. Algebraically determine the **x-intercept** and explain (in a complete sentence) what it means in the problem situation.

c. Algebraically determine the **y-intercept** and explain (in a complete sentence) what it means in the problem situation.

12. Solve each equation for the indicated variable.

a. $a = b \cdot c$ solve for c

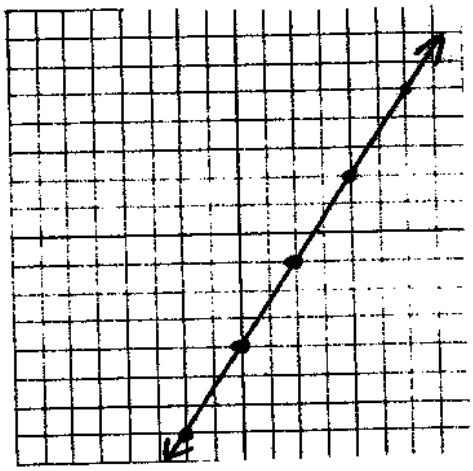
b. $s + h = q$ solve for h

c. $x \cdot y = z$ solve for y

d. $k = j + m$ solve for j

13. Analyze the given graphs.

a.



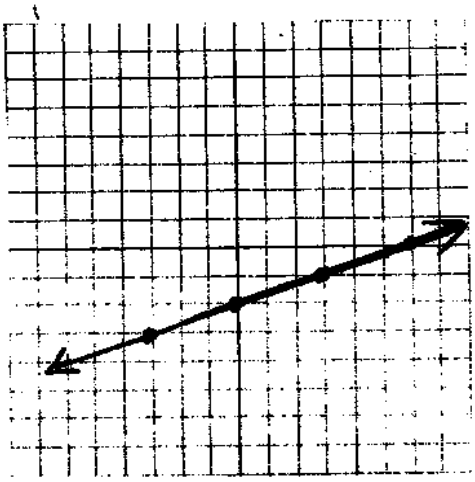
The slope of the line is (positive, negative, zero or undefined).

m =

Slope-intercept equation of the line:

y = _____

b.



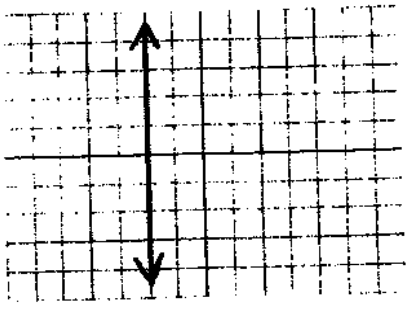
The slope of the line is (positive, negative, zero or undefined).

m =

Slope-intercept equation of the line:

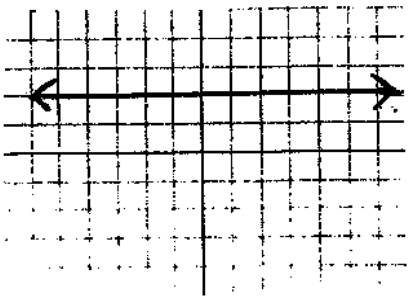
y = _____

c.



The slope of the line is (positive, negative, zero or undefined).

d.



The slope of the line is (positive, negative, zero or undefined).