Algebra I
Unit 3 Test REVIEW

Name KEY
Date ____ Period ____

For 1-2: Which ordered pair is not a solution for the equation given?

1. $6x + y = 8$

plug in each point for x & y, check for true statement.

A. (3, -10) $6(3) - 10 \stackrel{?}{=} 8$, $18 - 10 = 8$ ✓

B. (-3, 26) $6(-3) + 26 \stackrel{?}{=} 8$, $8 = 8$ ✓

C. (2, -4) $6(2) + (-4) \stackrel{?}{=} 8$, $8 = 8$ ✓

D. (-1, -4) $6(-1) - 4 \stackrel{?}{=} 8$, $-10 \neq 8$

2. y=4

y is ALWAYS 4 (x, 4)

A. (0, 4)

B. (2, 4)

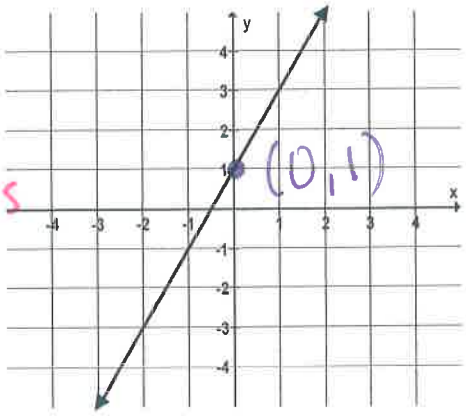
C. (4, -1)

D. (-5, 4)

3. Which ordered pair best represents the *y*-intercept of this function?

(0, y) crosses y-axis

A. (1, 0)
B. (0, 1)
C. (0, –0.5)
D. (-0.5, 0)



4. What is the *x*-intercept of the equation $y = -3x - 12$?

cover up y!

$0 = -3x - 12$
$+12 \quad +12$
$12 = -3x$
$\frac{12}{-3} = \frac{-3x}{-3}$
$-4 = x$

(-4, 0)

5. What is the *y*-intercept of the equation $4x + 2y = 8$?

cover up x!

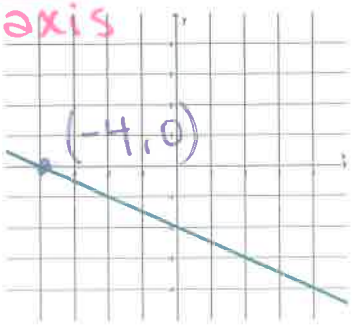
$+2y = 8$
$\frac{2y}{2} = \frac{8}{2}$
$y = 4$

(0, 4)

6. Which ordered pair best represents the *x*-intercept of the line in the graph?

crosses x-axis (x, 0)

A. (0, –4)
B. (0, 4)
C. (–4, 0)
D. (4, 0)



Determine the slope of the line that passes through each pair of points. $m = \frac{RISE}{RUN} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

7.

x	y
5	3
5	-8
5	-12

+0 < 5 > -11
+0 < 5 > -4

$m = \frac{-11}{0}$ can't divide by zero!

m = undefined

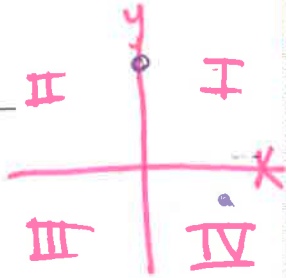
8. (2j, -5j) (-3j, -2j)
x_1 y_1 x_2 y_2

$m = \frac{-2j-(-5j)}{-3j-2j} = \frac{3j}{-5j} = -\frac{3}{5}$

m = -3/5

9. a) The point (0, 8) is in which quadrant or on which axis? y-axis

b) The point (12, -3) is in which quadrant? IV



Solve the equation for y. Name the slope of the line.

10. $12x - 2y = 10$

Add/subtract x first

$-12x \quad -12x$

$\frac{-2y}{-2} = \frac{-12x}{-2} + \frac{10}{-2}$

$y = 6x - 5$

Slope = 6 (m)

$y = mx + b$
$y = 6x - 5$

11. Find the range for the equation $3x + 2y = -4$ if the domain is $\{-2, -1, 0\}$

y x

$x = -2$: $3(-2) + 2y = -4$, $\frac{2y}{2} = \frac{2}{2}$, $y = 1$

$x = -1$: $3(-1) + 2y = -4$, $\frac{2y}{2} = \frac{1}{2}$

$x = 0$: $3(0) + 2y = -4$, $\frac{2y}{2} = \frac{-4}{2}$

3 answers $\{1, \frac{1}{2}, -2\}$

12. If the point $\left(x, \frac{1}{3}\right)$ is on the graph of $2x + 3y = 6$, find

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

$2x + 3\left(\frac{1}{3}\right) = 6$

$2x + 1 = 6$

$-1 \quad -1$

$\frac{2x}{2} = \frac{5}{2}$

$x = 5/2$ or 2.5

13. Using the equation given, fill in the table and draw the graph.

$3y - 12 = 6x$

Solve for y!

X	Y
-3	-2
-1	2
0	4
3	10
5	14

$3y - 12 \quad 6x$
$+12 \quad +12$

$\frac{3y}{3} = \frac{6x}{3} + \frac{12}{3}$

$y = 2x + 4$

Plug into y= 2nd GRAPH

use a straightedge!!

Determine the value of r so the line that passes through each pair of points has the given slope.

14. $(2, r)$ and $(1, -3)$ m=-3

$x_1\ y_1$ $x_2\ y_2$

point-slope: $y_2 - y_1 = m(x_2 - x_1)$

$-3 - r = -3(1-2)$

$-3 - r = -3(-1)$

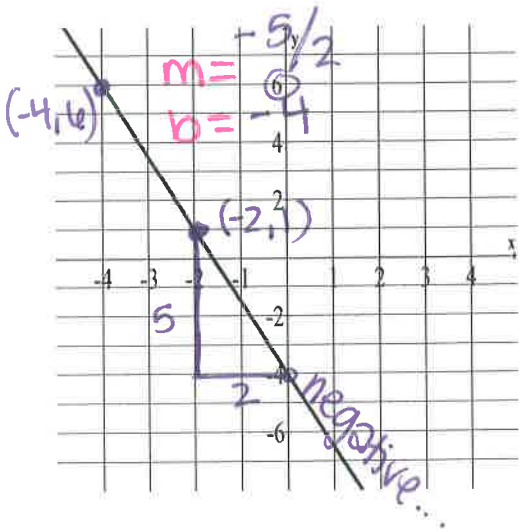
$-3 - r = 3$

$+3 \quad +3$

$-r = 6$

$r = -6$

15. Use the graph to the right to answer the following questions:



m= $-5/2$

a. Write the linear equation $y = mx + b$

$y = -\frac{5}{2}x - 4$

b. Find f(-2) = 1

$x = -2$

c. Find f(x) = 6

$y = 6$

$x = -4$

16. If $f(x) = \frac{2}{3}x^2 + 8x$, what is the value of $f(6)$?

$x = 6$

$f(6) = \frac{2}{3}(6)^2 + 8(6)$

calculator!

721

For 19-20: Determine the independent and dependent variable in each situation.

19. The number of gum balls, g, that can be packaged in a box with a volume of V cubic units is given by $g = 40V + 15$

dependent independent

Number of Gum Balls: dependent

Volume of the Box: independent

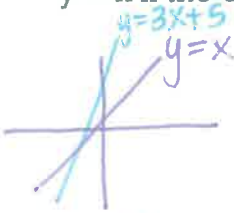
20. Jake works as a sales representative. He earns $1,275 per month plus an 8% commission on his total sales.

Total Income: dependent

Total Sales: independent

↑ the can change!

21. Describe the change of the graph of y = x if the equation changes to y=3x+5.



- steeper
- up 5

graph $y_1 = x$

$y_2 = 3x + 5$

22. A horizontal line has 0 slope.

23. A vertical line has undefined slope.

HOY VUX

24. The annual production of a farm crop is modeled by $y_1 = \frac{1}{2}x + 4000$. If the model is changed to $y_2 = x + 4000$, the production will:

$m_1 = \frac{1}{2}$ $m_2 = 1$

still increasing

A decrease at the same rate
B increase at double the original rate
C increase at ½ the original rate
D decrease at double the original rate

25. Leslie and her cousin went to a restaurant for dinner. Leslie's dinner cost $5 more than her cousin's. If their combined bill was under $25, which inequality best describes the cost of their dinners?

Leslie + cousin < 25
$(5 + x) + x < 25$

A $x - (x + 5) < 25$
B $x + 5 < 25x$
C $x + (x + 25) < 5$
D $x + (x + 5) < 25$

26. The late fee for overdue books at a library is $0.25 per day per book, with a maximum late fee of $5.00 per book. Which graph models the total late fee for 3 books that were checked out on the same day and are overdue?

1 day = $0.75.