Required A.5C A.2B A.1D A.4A A.6B, A.7B
Supporting A.1A, A.1C, A.3B, A.4C
RC: 1, 2, 3, 4 A.5A, A.6B, A.6F, A.6D, A.6E, A.7A, A.7B, A.8A

Name: Key

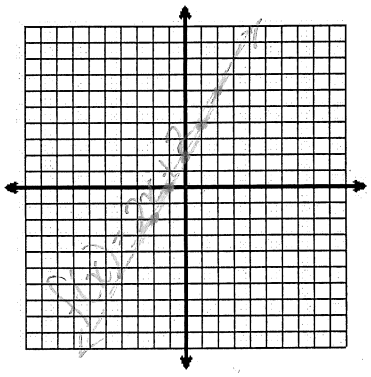
Algebra I Review Functions

Complete the table and graph the following

1. $f(x) = 2x + 2$

f(x)

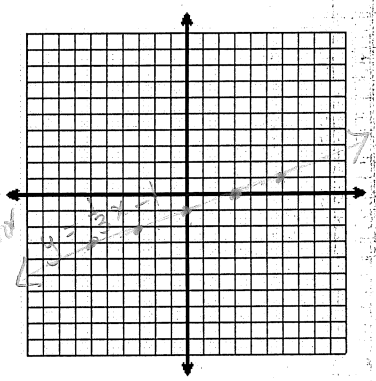
x	y
-2	-2
-1	0
0	2
1	4
2	6



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

x	y
-6	-3
-3	-2
0	-1
3	0
6	1

use multiples of 3 b/c denominator on slope is 3



Determine if the following are functions.

yes 3.

all x values are unique

x	y
2	1
3	2
4	1
5	4

no 4.

all x-values are 3

x	3	3	3	3
y	1	2	3	4

5. Find the range of this function if the domain is {-1, 0, 5}?

$y = -3x + 5$ 8 5 -10

graph; ctrl-T for table
look for y-values when x is -1, 0, + 5.

Range {8, 5, -10}
Answer

6. Find the domain of this function if the range is {-3, 0}?

$y = -3x + 6$ 3 2

graph; ctrl-T for table
look x values when y is -3 + 0.

domain {3, 2}
Answer

7. Solve for y.

$4x + 3y = 24$

$-4x \quad -4x$

$\frac{3y}{3} = \frac{-4x}{3} + \frac{24}{3}$

$y = -\frac{4}{3}x + 8$

$y = \frac{-4}{3}x + 8$
Answer

8. Solve for y. Graph the result.

$3y + 2x = -12$

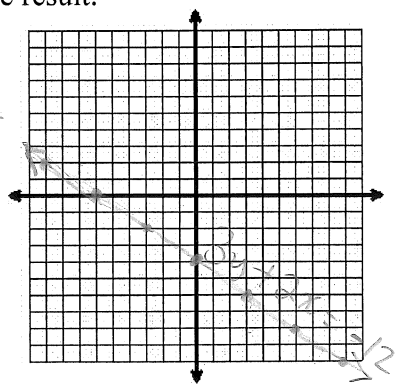
$-2x \quad -2x$

$\frac{3y}{3} = \frac{-2x}{3} - \frac{12}{3}$

$y = \frac{-2}{3}x - 4$

y-int (0, -4)

$m = \frac{-2}{3}$ (down 2, right 3)



9. Solve for y. Graph the result.

$3x + 4y = -8$

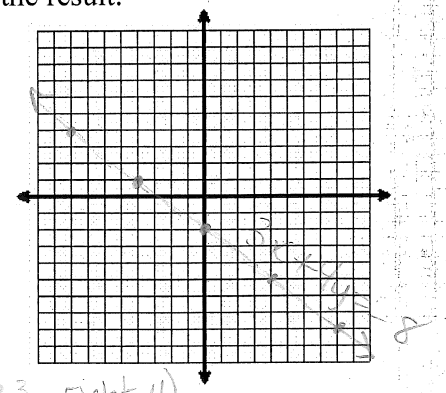
$-3x \quad -3x$

$\frac{4y}{4} = \frac{-3x}{4} - \frac{8}{4}$

$y = \frac{-3}{4}x - 2$

y-int (0, -2)

$m = \frac{-3}{4}$ (down 3, right 4)



10. If (x, -8) is a solution to $14x - 6y = 12$, what is the value of x?

$14x - 6(-8) = 12$
$14x + 48 = 12$
$-48 \quad -48$
$\frac{14x}{14} = \frac{-36}{14}$ $\quad x = \frac{-18}{7}$

$x = \frac{-18}{7} = -2\frac{4}{7}$

Answer

11. If (-4, y) is a solution to $y = 3x - 7$, what is the value of y?

$y = 3(-4) - 7$
$y = -12 - 7$
$y = -19$

$y = -19$

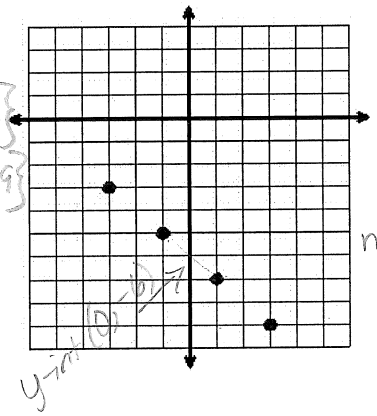
Answer

12. Use the graph on the right to answer the following.

Domain: $\{-3, -1, 1, 3\}$ $\{x \mid x = -3, -1, 1, 3\}$

Range: $\{-3, -5, -7, -9\}$ $\{y \mid y = -3, -5, -7, -9\}$

Function rule: $y = -x - 6$



m = down 2, right 2

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

13. Which ordered pair is NOT on the graph of 5x + y =1?

- get into slope intercept form
- graph
- table

$5x + y = 1$
$-5x \quad -5x$
$y = -5x + 1$

A. (0,1) ✓ B. (-1, 5) ✗ (-1, 6) C. (1, -4) ✓ D. (-1, 6) ✓

14. Write the function rule for the table.

a.

$m = \frac{\Delta y}{\Delta x}$

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

x	y
-2	-3
-1	-1
0	1
1	3

+1, +1, +1; +2, +2, +2; y-int

Function rule: $y = 2x + 1$

b.

$m = \frac{\Delta y}{\Delta x}$

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

x	y
0	2
1	5
2	8
3	11

+1, +1, +1; +3, +3, +3; y-int

Function rule: $y = 3x + 2$

B 15. Daisy was picking flowers to give to her friends. Each bouquet contained 6 freshly picked flowers. Which of the following statements is true?

a. The number of flowers is independent ~~on~~ of the number of bouquets.
b. The number of bouquets is dependent on the number of flowers picked.
c. The number of flowers is dep~~e~~ndent on the number of bouquets.
d. Not enough information.

16. Bilbo and Frodo decided to open a business selling class rings. The rings cost $250 for every ounce of gold and $50 for the stone. The total cost of a ring is represented by the function:

$$C = 250z + 50$$

total cost of ring depends on the weight of gold used
(dep) (ind)

Where C is the total cost and z is the weight of gold in ounces. Determine the Independent and dependent Variables.

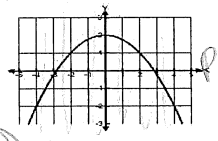
Independent: z = weight of gold Dependent: C = total cost of a ring

17. If (-2, y) is a solution to 4x – y = 9, find the value of y.
Show your work.

$4(-2) - y = 9$
$-8 - y = 9$
$+8 \quad +8$
$\frac{-y}{-1} = \frac{17}{-1}$
$\boxed{y = -17}$

18. Determine which relation is *not* a function.

A.



passes vertical line test so all x-values are unique

B.

x	-2	0	1	3
y	0	0	2	1

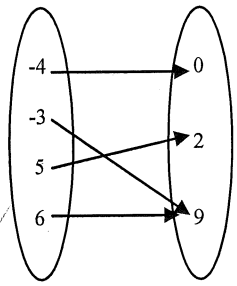
all x-values unique

C.

x	y
-4	0
-3	2
-3	9
5	9

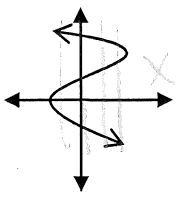
x-values repeat

D.

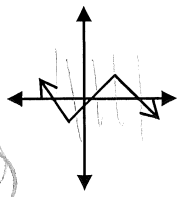


all input unique

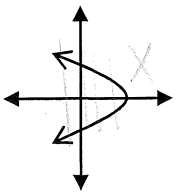
_____ 19. Which one of the following graphs is a function?



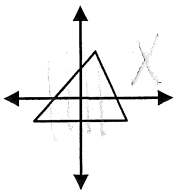
A.



B.



C.



D.

passes vertical line test so All x-values are unique

Identify the independent and dependent variables.

20. Weight of apples, cost of apples
cost depends on weight

Dependent Variables: cost of apples

Independent Variable: weight of apples

21. Total cost of books, and the number of books
Cost depends on how many

Dependent Variable: total cost of books

Independent Variable: the # of books

22.

$m = \frac{\Delta y}{\Delta x}$

x	y
-4	-2
-2	-1
6	3
8	4

+2 +8 +2

+1 +4 +1

$\frac{1}{2} = \frac{4}{8} = \frac{1}{2}$

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

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

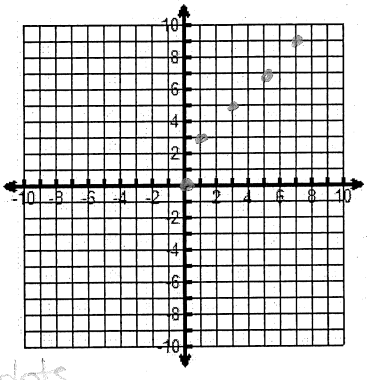
$4 = \frac{1}{2}(8) + b$

$4 = 4 + b$

22. Function rule: $\boxed{y = \frac{1}{2}x}$

23. **Graph the data.**

x	y
0	0
1	3
3	5
5	7
7	9



Note: discrete data, do not "connect" dots.

Function Notation- use the following information to answer.

$f(x) = 2x - 4$ $\qquad$ $g(x) = x^2 - 4x$

graph, Ctrl + T for table

24.) $f(-5)$ = −14

x is −5

25.) $g(-3)$ = 21

26.) $f(3) - 1$ = 1

2 − 1

27.) $2f(3)$ = −6

2(−3)

28.) $f(2) + 3$ = 3

0 + 3

29.)* $g(f(4))$ = 0

g(2·4−4)

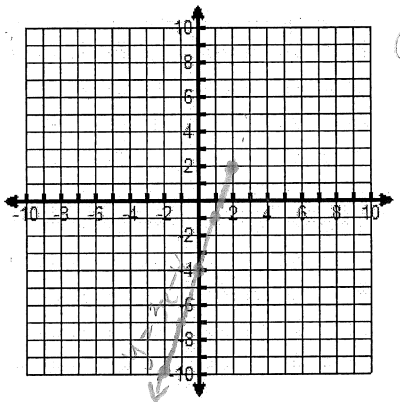
g(8−4)

f(4) = 4

g(4) = 0

Graph the function with the given domain.

30. $y = 3x - 4$; domain $\{x \le 2\}$



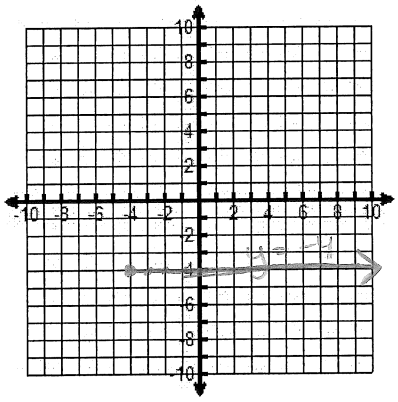
x	y
2	2
1	−1
0	−4
−1	−7
−2	−10

inclusive

boundary point

31. $y = -4$; domain $\{x \ge -4\}$

inclusive



x	y
−4	−4
−3	−4
−2	−4
−1	−4
0	−4

boundary point

B 32. You pay \$50 to attend dance camp. You pay \$5 for transportation each day. Which of the following expresses the total cost C (in dollars) as a function of the number of days d that you attend camp?

$C = 50 + 5d$

A. $C = 55d$ $\qquad$ B. $C = 50 + 5d$

C. $C = 50d + 5$ $\qquad$ D. Not here

x = −6 33. If (x, -16) is a solution to $14x - 6y = 12$, what is the value of x?

y

$14x - 6(-16) = 12$

$14x + 96 = 12$

$-96 \quad -96$

$\frac{14x}{14} = \frac{-84}{14}$

$x = -6$