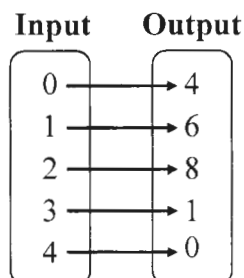


Functions Review

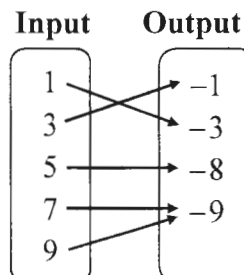
List the ordered pairs shown in the mapping diagram.

1)



$(0, 4), (1, 6), (2, 8),$
 $(3, 1), (4, 0)$

2)



$(1, -3), (3, -1), (5, -8)$
 $(7, -9), (9, -9)$

Find the value of y for the given value of x .

3) $y = x - 5; x = 9$

$y = 4$

4) $y = 4x; x = -7$

$y = -28$

5) Write an equation that describes the function shown by the table.

Input, x	0	1	2	3	4
Output, y	0	5	10	15	20

$y = 5x$

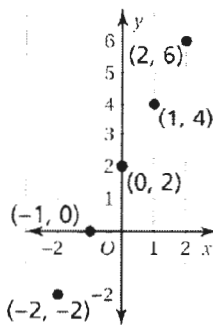
6) Write a function rule for the statement, "The output is 4 less than the input." Then complete the table.

Input, x	1	2	3	4
Output, y				

$y = x - 4$

Use the graph or table to write a linear function that relates y to x .

7)



$y = 2x + 2$

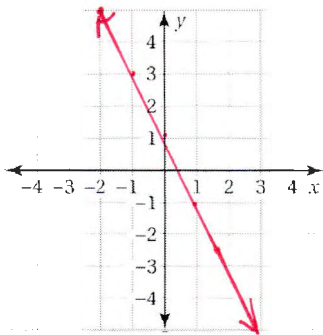
8)

x	-1	0	1	2
y	-4	0	4	8

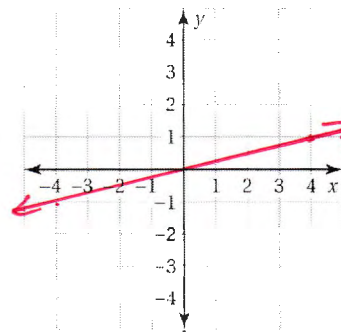
$y = 4x$

Solve the system of linear equations by graphing.

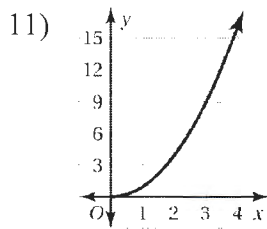
9) $y = -2x + 1$



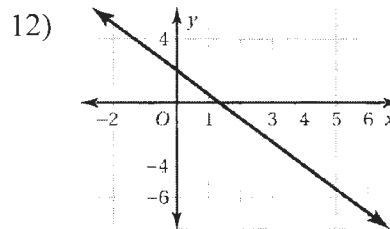
10) $y = \frac{1}{4}x$



Does the table or graph represent a linear or nonlinear function? Explain.



Nonlinear. Graph is not a line.



Linear. The graph is a line.

13)

Input, x	1	2	3	4
Output, y	0	3	8	15

Nonlinear. The chart would not produce a line.

14)

Input, x	1	2	3	4
Output, y	-1	-3	-5	-7

Linear. The chart would produce a line.

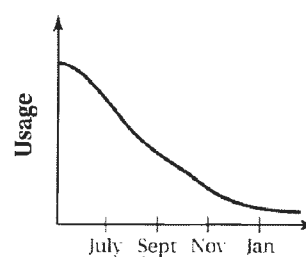
- 15) The table shows the number y of muffins baked in x pans. What is the missing y -value that makes the table represent a linear function?

Pans, x	3	4	5
Muffins, y	18	?	30

24

- 16) The graph shows the water usage for a business. Describe the change in usage from July to December.

The usage decreases at a decreasing rate.



- 17) Dan returns \$42.50 worth of merchandise and then buys 4 shirts for \$7.84 each. How much money does Dan have left?

\$11.14

- 18) Which method can you use to eliminate a variable from the following system of equations?

A. Add the first equation to the second equation.

$$2x - 6y = 3$$

B. Subtract the first equation from the second equation.

$$4x + y = -3$$

C. Add twice the first equation to the second equation.

☒ D. Subtract twice the first equation from the second equation.

- 19) The profit y from selling x muffins can be represented by a linear function. The profit from selling 5 muffins is \$4. The profit from selling 7 muffins is \$8. What is the slope of the line represented by the data?

F. $\frac{1}{2}$

G. $\frac{4}{5}$

H. 1

☒ I. 2

- 20) To repair an air conditioner, David charges a one-time fee for a service call plus an hourly rate for the time required for the repair.

- a. Complete the input-output table below for the total amount y that David will charge for a repair that requires x hours.

Input, x	1	2	3	4	5	6
Output, y	120	165	210	<i>255</i>	<i>300</i>	<i>345</i>

✓ 45 ✓ 45 ✓ 45 ✓ 45 ✓ 45

- b. What is the hourly rate that David charges? Explain your reasoning.

Hourly rate \$ *45*

The fees increase \$45 for every hour.