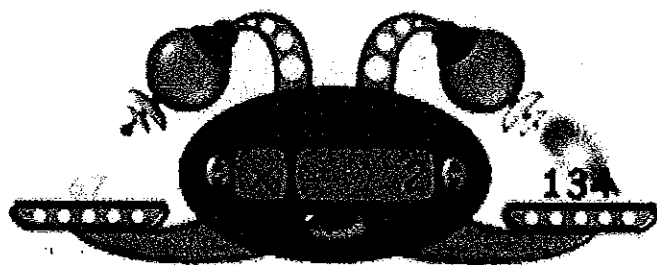


UNIT 5 : GRAPHING & FUNCTIONS



WRITING FUNCTIONS

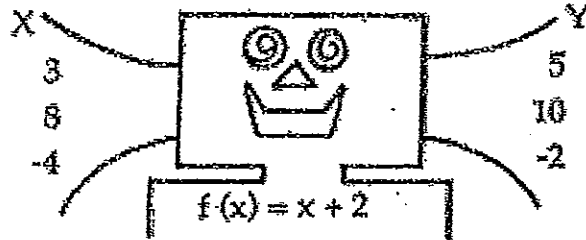


NAME _____

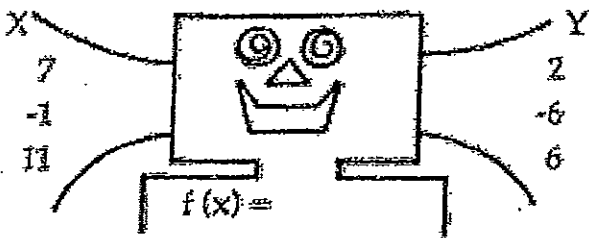
The Function Machine

Our function machine takes a number $[x]$, operates on the number $[f(x)]$, and changes it to a new number $[y]$. Below are some function machines, the input $[x]$, and the output $[y]$. Can you figure out what the machine did $[f(x)]$ to the input?

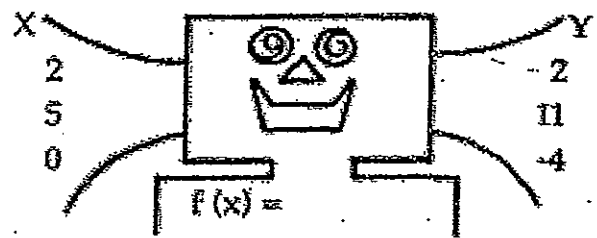
Example:



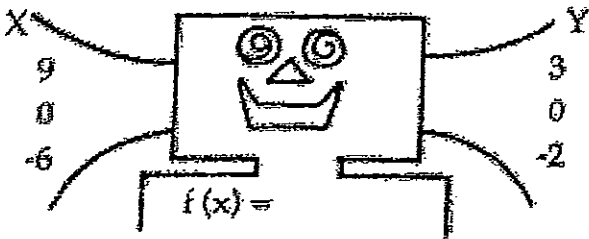
1.



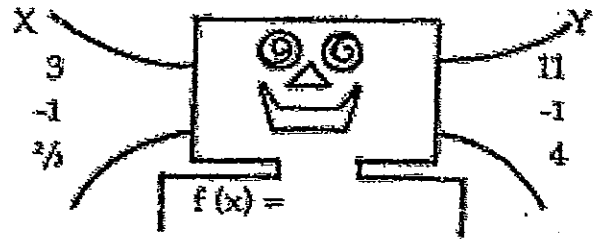
5.



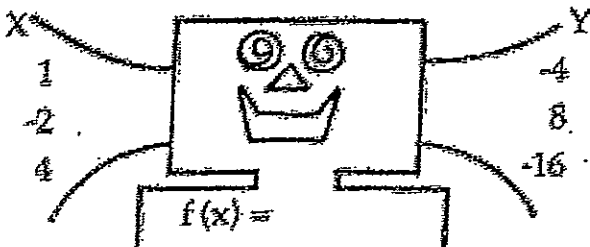
2.



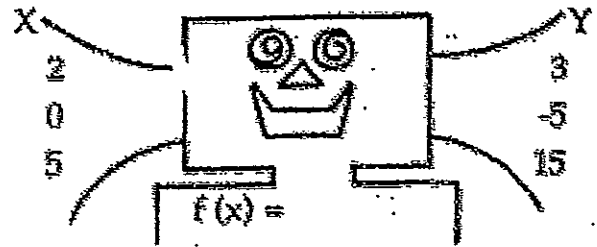
6.



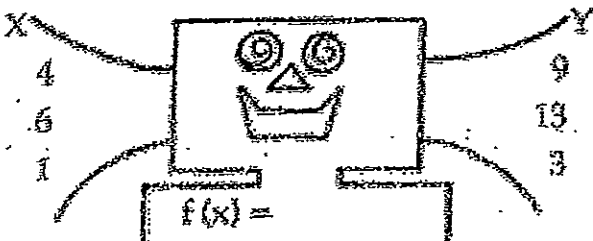
3.



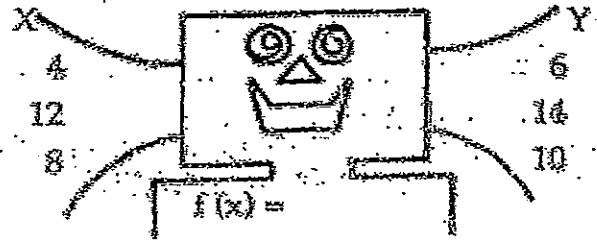
7.



4.



8.



NOTES

Name: _____

Function Equation Notes:

Objective: I will be able to determine the equation of a function.

Domain- This is the input. (Usually what is in the x column or variable column.)

X	F(X)
3	12
4	14
5	16
6	18
7	20

Range- This is the output. (Usually what is in the f(x) (or y) column.)

- 1.) Find the difference of the values in the domain (input column) _____
- 2.) Find the difference of the values in the range (F(X)) column. _____
- 3.) Write a ratio of the range difference to the domain difference. _____
- 4.) Multiply the x value by the ratio. Subtract that value from the F(X) column. _____
- 5.) The answer is what you must add every time to get the F(X) value. _____

Function equation is: _____

N	F(N)
1	1
2	4
3	7
4	10
5	13

Find the ratio of the range difference to the domain difference.

Multiply an N value by that ratio and see what the difference is from the F(N).

That difference is what you have to add every time. Try it.

Do the following.

1.

N	F(N)
1	1
2	4
3	7
4	10
5	13

2.

N	F(N)
3	11
4	14
5	17
6	20
7	23

3.

N	F(N)
-4	-11
-2	-3
0	5
2	13
4	21

4.

x	F(x)
0	-2
6	0
12	2
18	4
24	6

Review: Use the following formulas: $C = \frac{5}{9}(F - 32)$ or $F = \frac{9}{5}C + 32$

5.) What is the temperature in Celsius if the Fahrenheit temperature is:

a. 50

b. 14

6. What is the Fahrenheit temp. if the Celsius temperature is:

a. -10

b. 25

Write the function equation given the table:

11.)

x	f(x)
1	7
2	9
3	11
4	13
5	15

12.)

n	f(n)
2	8
4	12
6	16
8	20
10	24

13.)

a	b(a)
-2	-8
0	-2
2	4
4	10
6	16

14.)

x	f(x)
1	12
4	18
7	24
10	30
13	36

15.)

n	f(n)
3	8
5	10
7	12
9	14
11	16

16.)

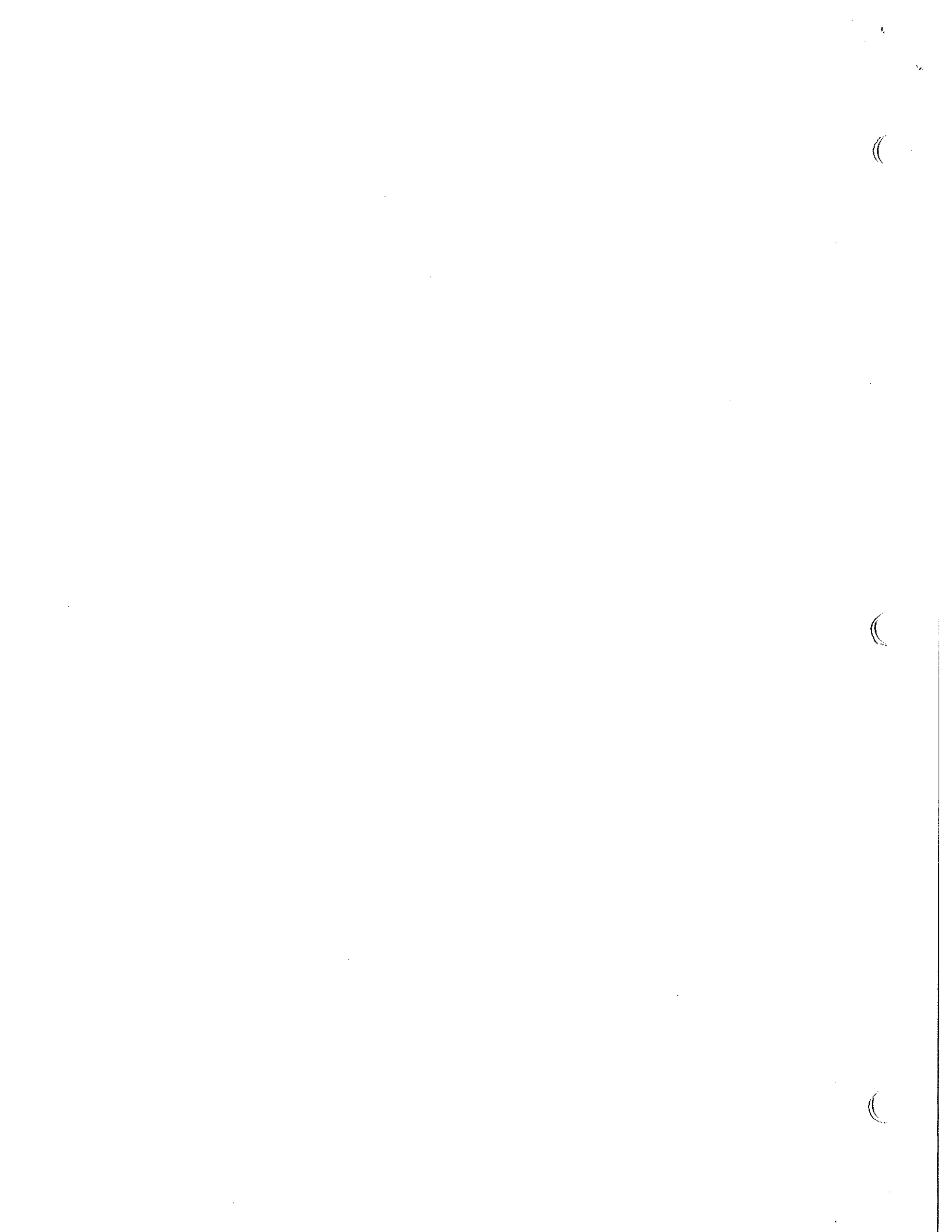
x	y
1	8
2	13
3	18
4	23
5	28

17.)

m	n
-2	7
-1	11
0	15
1	19
2	23

18.)

x	f(x)
0	2
4	4
8	6
12	8
16	10



Writing Functions from tables

1.

X	Y
-1	-4
1	-2
3	0
5	2
7	4

The function is _____.

2.

X	Y
-1	-3
0	0
1	3
2	6
3	9

The function is _____.

3.

X	Y
-4	-1
0	0
4	1
8	2
12	3

The function is _____.

4.

X	Y
-3	-5
-1	-1
1	3
3	7
5	11

The function is _____.

5.

X	Y
-1	-4
1	2
3	8
5	14
7	20

The function is _____.

6.

X	Y
-6	-1
-3	0
0	-1
3	2
6	3

The function is _____.

7.

X	Y
0	-4
1	-1
2	2
3	5
4	8

The function is _____.

8.

X	Y
-3	7
-1	5
1	3
3	1
5	-1

The function is _____.

LESSON 3 Practice B
3 Writing Functions

Determine a relationship between the x - and y -values. Write an equation.

1.

x	-4	-3	-2	-1
y	-1	0	1	2

2. $\{(2, 3), (3, 5), (4, 7), (5, 9)\}$

Identify the independent and dependent variables in each situation.

3. Ice cream sales increase when the temperature rises.

4. Food for the catered party costs \$12.75 per person.

I: _____

I: _____

D: _____

D: _____

Identify the independent and dependent variables. Write a rule in function notation for each situation.

5. Carson charges \$7 per hour for yard work.

6. Kay donates twice what Ed donates.

Evaluate each function for the given input values.

7. For $f(x) = 5x + 1$, find $f(x)$ when $x = 2$ and when $x = 3$. _____

8. For $g(x) = -4x$, find $g(x)$ when $x = -6$ and when $x = 2$. _____

9. For $h(x) = x - 3$, find $h(x)$ when $x = 3$ and when $x = 1$. _____

Complete the following.

10. An aerobics class is being offered once a week for 6 weeks. The registration fee is \$15 and the cost for each class attended is \$10. Write a function rule to describe the total cost of the class. Find a reasonable domain and range for the function.

1.) Each day Jose and Maria collect shells. Maria always collects 5 more shells than Jose.

a.) Complete the table to show how many shells they found each day.

Jose	Maria
1	
2	7
3	
4	
	10
6	
7	
	13

b.) Identify the independent variable. _____

c.) Identify the dependent variable. _____

d.) Write an equation to represent how the columns are related. _____

2.) Carlotta conducted an experiment on the growth rate of bacteria. The table below shows her results.

Growth Rate of Bacteria

Number of hours (h)	Number of bacteria (b)
0	20
1	56
2	92
3	128

a.) Identify the independent variable. _____

b.) Identify the dependent variable. _____

c.) Write a function rule for the number of bacteria, b , after h hours.
Show work here.

d.) What will the number of bacteria be after 5 hours?
Show work here.