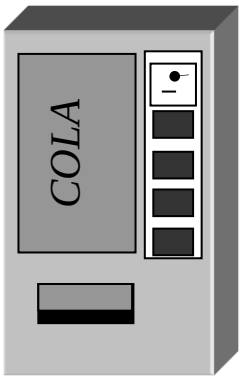
Unit 2B – Function

Introduction: What's a Function? Name:

"Do"main	Ran"ge *t"*



A coke machine is a good example of a relation that is a **function**. In the machine above assume the price for a soft drink is listed at $1.30 and the top button shows a picture of a 16 oz Coca Cola bottle.

1. If you were to put 2 dollar bills into the coke machine and press the top button what would you get in return?

2. If your repeated the action in step # 1 what would happen? And again?

3. What would happen if you put in 8 quarters and pushed the top button? (Remember that is a different input)

---

4. **ORDERED PAIRS**: Which of the sets of ordered pairs could be considered a function? List the domain and range if it is a function.

a. $\{(3,5),(2,6),(-5,3)(-7,1),(2,1)\}$ b. $\{(-2,1),(3,2),(5,2)(-6,5),(-2,1)\}$ c. $\{(7,2),(5,8),(3,1)(2,9),(-5,7)\}$

circle one:		*circle one:*		*circle one:*	
Function	**Not a Function**	**Function**	**Not a Function**	**Function**	**Not a Function**
Domain:		**Domain:**		**Domain:**	
Range:		**Range:**		**Range:**	

---

5. **TABLES**: Which of the sets of ordered pairs in each table could be considered a function? List the domain and range if it is a function.

a.

Input	– 2	0	2	4	6
Output	0.25	1	4	16	64

b.

x	2	0	2	4	6
y	4	– 2	4	3	4

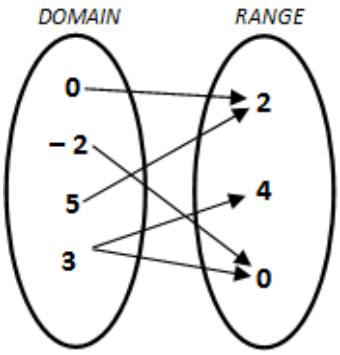
c.

x	**y**
1	4
2	3
1	4
2	2
3	5

circle one:		*circle one:*		*circle one:*	
Function	**Not a Function**	**Function**	**Not a Function**	**Function**	**Not a Function**
Domain:		**Domain:**		**Domain:**	
Range:		**Range:**		**Range:**	

6. **MAPPINGS**: Which of the mappings could be considered a function?

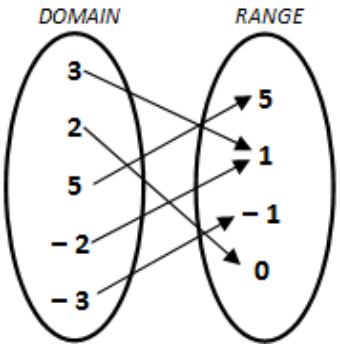
a.



circle one:

Function **Not a Function**

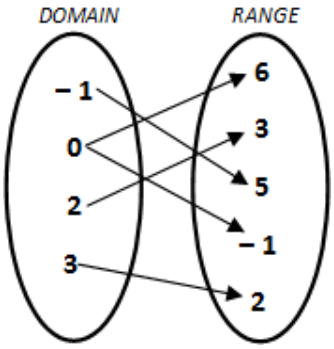
b.



circle one:

Function **Not a Function**

c.



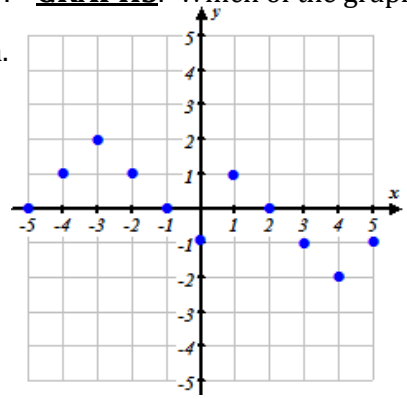
circle one:

Function **Not a Function**

---

7. **GRAPHS**: Which of the graphs could be considered a function? List the domain and range if it is a function.

a.



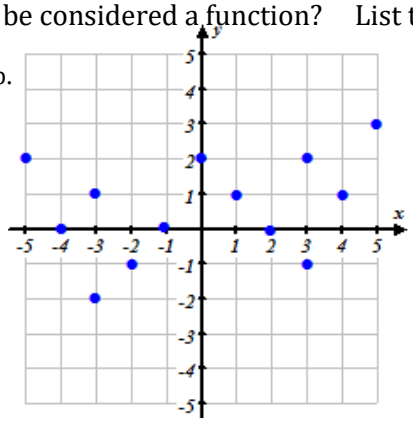
circle one:

Function **Not a Function**

Domain:

Range:

b.



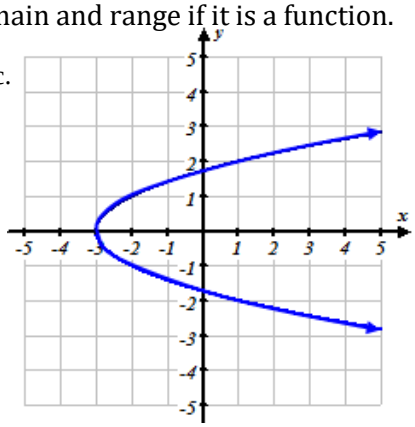
circle one:

Function **Not a Function**

Domain:

Range:

c.



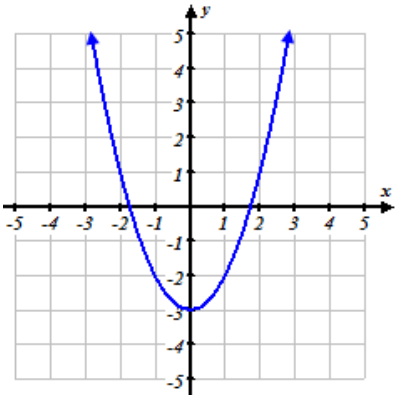
circle one:

Function **Not a Function**

Domain:

Range:

d.



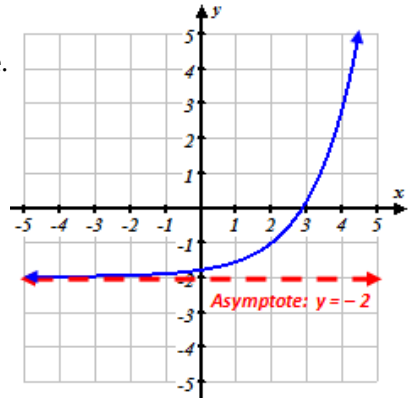
circle one:

Function **Not a Function**

Domain:

Range:

e.



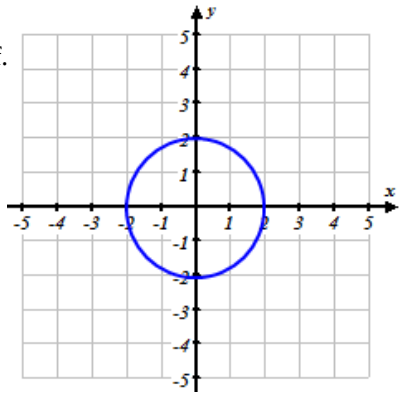
circle one:

Function **Not a Function**

Domain:

Range:

f.



circle one:

Function **Not a Function**

Domain:

Range:

8. **<u>SITUATIONAL EXAMPLES</u>**: Which of the situations could be considered a function? List the domain and range if it is a function.

a. A school administrator is using a database program called SASI. The administrator types a student number in the top box and the program returns the number of missed days in the bottom box. Each student has a unique ID number and the maximum number of absences any student has is 12 days.

circle one: **Function** **Not a Function**

Domain:

Range:

b. A teacher starting her first day of class tells the class that she will call out their first name and then the student is to respond with the total number of brothers and sisters they have. In the class there are 2 different students named Matt. The first student named Matt has 2 siblings the other has 4 siblings.

circle one: **Function** **Not a Function**

Domain:

Range:

c. The Yellow Taxi Cab Company in a city charges $3.00 as soon as you get in the cab and then an additional $0.50 for each mile they drive their customers. They are limited to driving a maximum distance of 20 miles

circle one: **Function** **Not a Function**

Domain:

Range:

---

9. Which of the equations could be written such that **y is a function of x**?
Circle each equation that could be written such that y is a function of x.

a. $y = 3x + 1$ b. $y^2 = x^2$ c. $y = \pm 2^x$ d. $y^3 = x + 1$ e. $y^4 + y = x^2$

---

10. **<u>FUNCTION NOTATION</u>**. Given the function $f(x) = 3x + 2$, determine the following:

a. $f(3)$ b. $f(t + 1)$ c. What is $\boldsymbol{x}$ if $f(x) = 17$?

11. **<u>FUNCTION NOTATION</u>**. Given the function $d(x) = x^2 + 3^x$, determine the following:

a. $d(2)$ b. $d(0)$

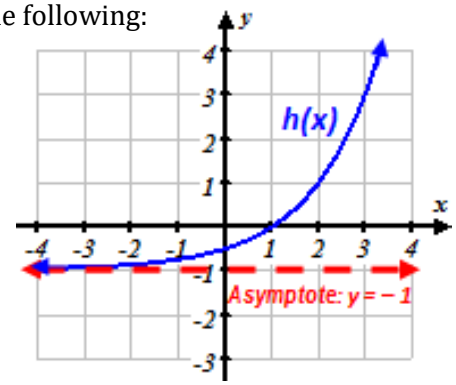
12. **FUNCTION NOTATION**. Given the function

x	−2	0	2	4	6
$g(x)$	4	$-\frac{1}{2}$	3	6	4

determine the following:

a. $g(0)$ b. $g(4)$ c. What is x if $g(x) = 4$?

13. **FUNCTION NOTATION**. Given the graph of the function h(x) determine the following:



a. $h(1)$ b. $h(3)$

c. What is x if $h(x) = 1$?

14. **FUNCTION NOTATION**. Given the function $b(x)$: {(2,3), (1,4), (4,2), (5,3), (3,0)}, determine the following:

a. $b(2)$ b. $b(3)$ c. What is x if $b(x) = 3$?

15. **FUNCTION NOTATION**. Given $f(8) = (8)^2 + 2(8)$, determine a possible equation for $f(x)$

16. **FUNCTION NOTATION**. Given the partial set of values for the function$h(x)$, determine a possible equation for $h(x)$.

x	−2	0	1	2	3
$h(x)$	−6	0	3	6	9

17. **FUNCTION NOTATION**. Given the partial set of values for the function $h(x)$, determine a possible equation for $p(x)$.

x	0	1	2	3	4
$p(x)$	2	3	4	5	6