Determine what the rule is for each table

| Input | Output |
| --- | --- |
| | 3 |
| | 5 |
| | 7 |
| | 9 |
| | 11 |

# Determine what the function is for each table

state the type of function

# Determine what the function is for each table

state the type of function

strategy: find the differences
if the 1st difference is the same=linear
if the 2nd difference is the same=quadratic
if the 3rd difference is the same=cubic
if there is a common ratio=exponential

Here are your choices:

| | | | |
|---|---|---|---|
| $5x^2$ | $(x+3)^2$ | $3x-7$ | $x^2+1$ |
| $x^3$ | $x^3+3$ | $x^2$ | $4x+1$ |
| $2^x$ | $3^x$ | $5x+3$ | ??? |
| $2x+3$ | $9+6x$ | $2^x-1$ | |
| $2x^2$ | $x^2-25$ | $\frac{1}{2}x-2$ | |

1.)

| Input | Output |
|---|---|
| 0 | 3 |
| 1 | 5 |
| 2 | 7 |
| 3 | 9 |
| 4 | 11 |

2.)

| Input | Output |
|---|---|
| 0 | -2 |
| 1 | -1.5 |
| 2 | -1 |
| 3 | -0.5 |
| 4 | 0 |

3.)

| Input | Output |
|---|---|
| 0 | -7 |
| 1 | -4 |
| 2 | -1 |
| 3 | 2 |
| 4 | 5 |

4.)

| Input | Output |
|---|---|
| 0 | 3 |
| 1 | 8 |
| 2 | 13 |
| 3 | 18 |
| 4 | 23 |

5.)

| Input | Output |
|---|---|
| 0 | 0 |
| 1 | 1 |
| 2 | 4 |
| 3 | 9 |
| 4 | 16 |

6.)

| Input | Output |
|---|---|
| 0 | 0 |
| 1 | 2 |
| 2 | 8 |
| 3 | 18 |
| 4 | 32 |

7.)

| Input | Output |
|---|---|
| 0 | 1 |
| 1 | 2 |
| 2 | 5 |
| 3 | 10 |
| 4 | 17 |

8.)

| Input | Output |
|---|---|
| 0 | -25 |
| 1 | -24 |
| 2 | -21 |
| 3 | -16 |
| 4 | -9 |

9.)

| Input | Output |
|---|---|
| 0 | 9 |
| 1 | 15 |
| 2 | 21 |
| 3 | 27 |
| 4 | 33 |

10.)

| Input | Output |
|---|---|
| 0 | 9 |
| 1 | 16 |
| 2 | 25 |
| 3 | 36 |
| 4 | 49 |

11.)

| Input | Output |
|---|---|
| 0 | 0 |
| 1 | 5 |
| 2 | 20 |
| 3 | 45 |
| 4 | 80 |

12.)

| Input | Output |
|---|---|
| 0 | 1 |
| 1 | 5 |
| 2 | 9 |
| 3 | 13 |
| 4 | 17 |

13.)

| Input | Output |
|---|---|
| 0 | 1 |
| 1 | 10 |
| 2 | 29 |
| 3 | 58 |
| 4 | 97 |

14.)

| Input | Output |
|---|---|
| 0 | 0 |
| 1 | 1 |
| 2 | 8 |
| 3 | 27 |
| 4 | 64 |

15.)

| Input | Output |
|---|---|
| 0 | 3 |
| 1 | 4 |
| 2 | 11 |
| 3 | 30 |
| 4 | 67 |

16.)

| Input | Output |
|---|---|
| 0 | 1 |
| 1 | 3 |
| 2 | 9 |
| 3 | 27 |
| 4 | 81 |

17.)

| Input | Output |
|---|---|
| 0 | 1 |
| 1 | 2 |
| 2 | 4 |
| 3 | 8 |
| 4 | 16 |

18.)

| Input | Output |
|---|---|
| 0 | 0 |
| 1 | 1 |
| 2 | 3 |
| 3 | 7 |
| 4 | 15 |

# Warm up 9/25/17: Function notation

Find the following values:

1.) find y when x is 3, $y=3x+2$

2.) find y when x is 9, $y=2x^2-1$

3.) find y when x is the unknown amount k

$y=2x^2-1$

4.) find y when x is the unknown amount (k+1)

$y=2x^2-1$

# Y=10x+2

a. Find y when x is 5 — y = 52

b. Find y when x is -3 — y = -28

c. Find y when x is (3a+2) — y = 30a + 22

d. Find y when x is (x+1) — y = 10x +12

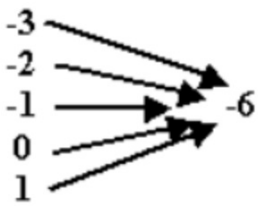
Domain: {x all Real Numbers}

Range: {y all real Numbers}

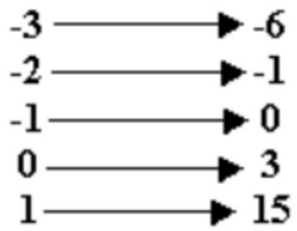
| | $Y=x^2-6$ | $Y=4x+5$ |
|---|---|---|
| Find y when x is 5 | | |
| Find y when x is -3 | | |
| Find y when x is (3a+2) | | |
| Find y when x is (3a+2) | | |
| Find y when x is (x+1) | | |
| Domain | | |
| Range | | |

## Which one of these is not like the others?

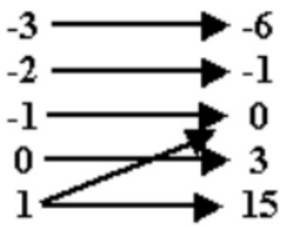
**A.**



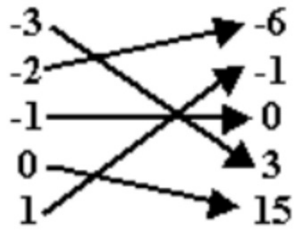

**B.**




**C.**




**D.**



function

a1

a2

a3

a4

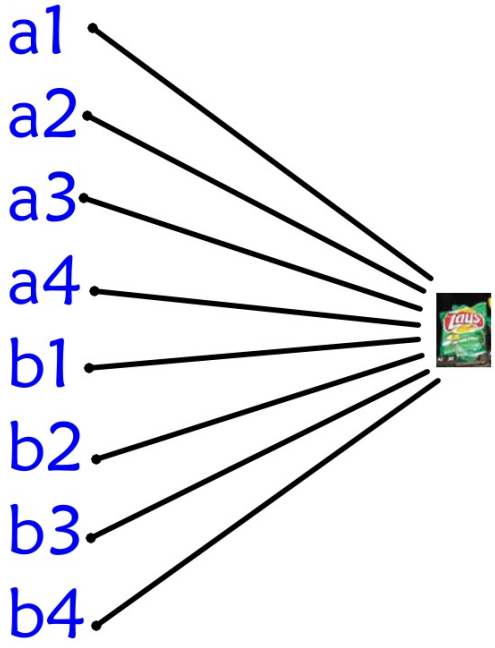
b1

b2

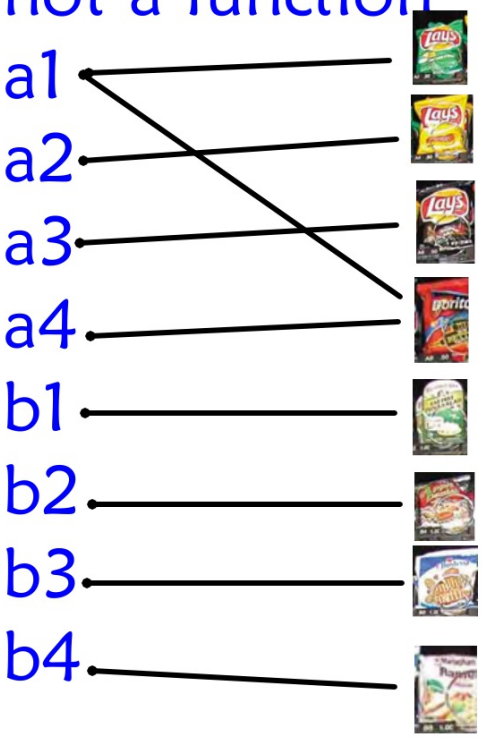
b3

b4

still a function




not a function



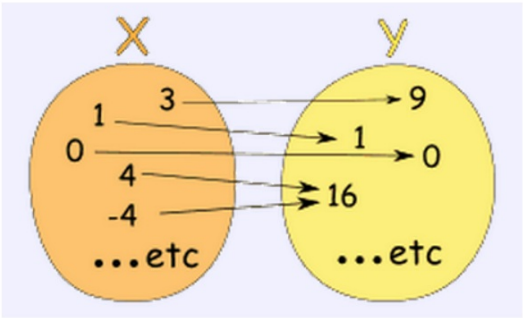

To be or not to be,....a function.

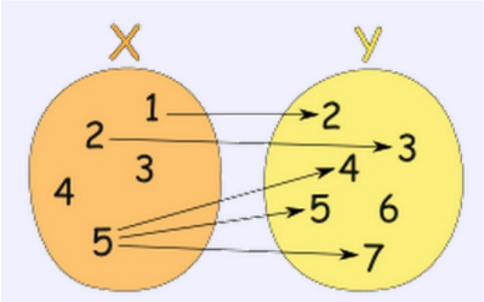


**definition of a function:**

one input(x) has one output(y=f(x))

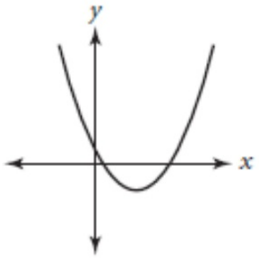
*outputs may be repeated



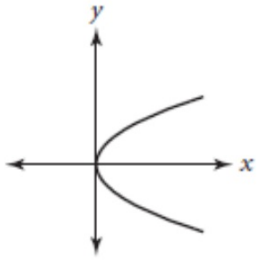



**1.** Determine whether or not each graph represents a function. Explain how you know.

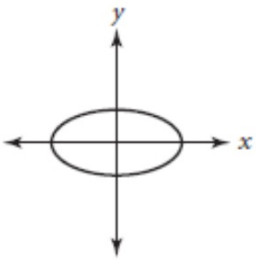
**a.**

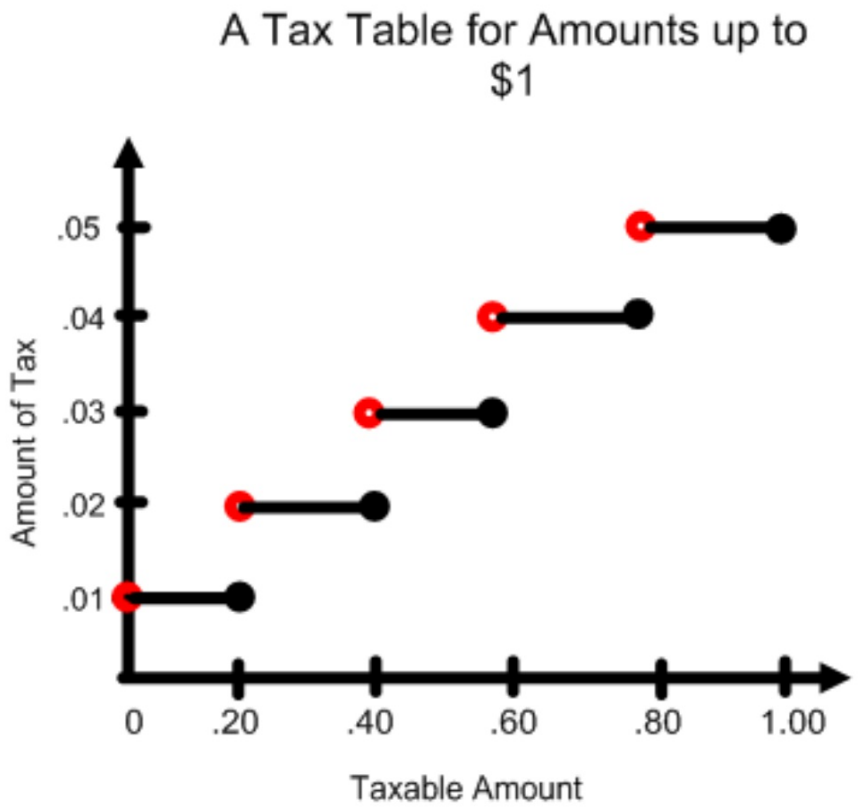



**b.**




**c.**




A Tax Table for Amounts up to $1
Amount of Tax
.05
.04
.03
.02
.01
0
.20
.40
.60
.80
1.00
Taxable Amount

fill in the table to make a function, and then fill in the table to make something that is not a function.

| Input | Output |
|---|---|
| | 0 |
| | 2 |
| 2 | 8 |
| 3 | |
| | |

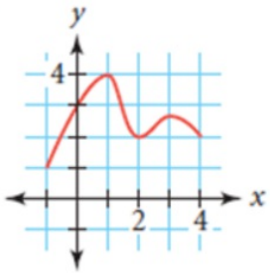
Then make a sketch of it in your notes.

# Investigation

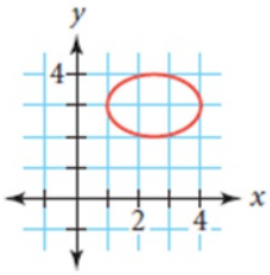
## To Be or Not to Be (a Function)

Below are nine representations of relations.

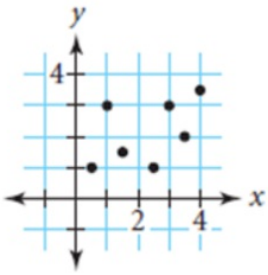
**a.**



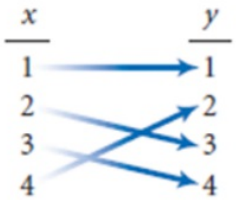

**b.**



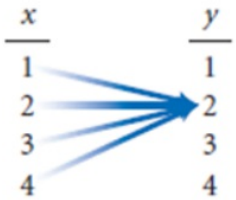

**c.**



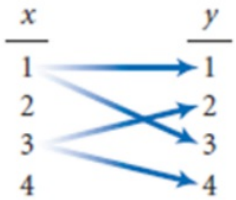

**d.**




**e.**




**f.**




**g.** independent variable: the age of each student in your class
dependent variable: the height of each student

**h.** independent variable: an automobile in the state of Kentucky
dependent variable: that automobile's license plate number

**i.** independent variable: the day of the year
dependent variable: the time of sunset

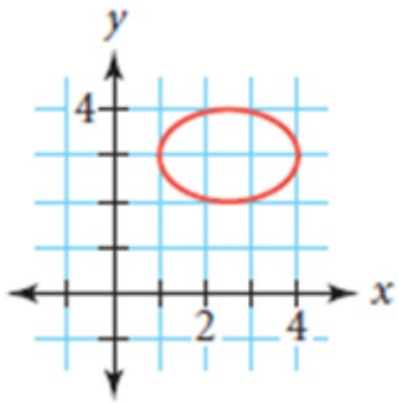
# Find f(3) for each graph

## Investigation

## To Be or Not to Be (a Function)

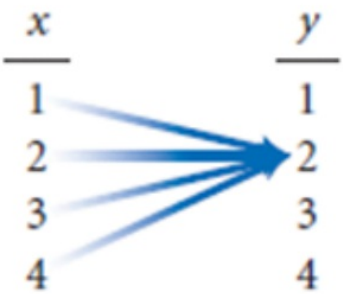
Below are nine representations of relations.


b.




c.


e.




f.

# Warm up Wednesday 10/23

$f(x) = x - 3$

$g(x) = 2x + 1$

X-INTERCEPT

Where would the root of $y = \frac{f(x)}{g(x)}$ be?

Where would the asymptote of $y = \frac{f(x)}{g(x)}$ be?

# Warm up Wednesday 10/23

$f(x) = x - 3$

$g(x) = 2x + 1$

X-INTERCEPT

Where would the root of $y = \frac{f(x)}{g(x)}$ be?

Where would the asymptote of $y = \frac{f(x)}{g(x)}$ be?

# Warm up Wednesday 10/23

fill in the table to make a function, and then fill in the table to make something that is not a function.

| Input | Output |
|---|---|
| | 0 |
| | 2 |
| 2 | 8 |
| 3 | |
| | |

| Input | Output |
|---|---|
| | 0 |
| | 2 |
| 2 | 8 |
| 3 | |
| | |

# Warm up Wednesday 10/23

fill in the table to make a function, and then fill in the table to make something that is not a function.

| Input | Output |
|---|---|
| | 0 |
| | 2 |
| 2 | 8 |
| 3 | |
| | |

| Input | Output |
|---|---|
| | 0 |
| | 2 |
| 2 | 8 |
| 3 | |
| | |