1.4 Notes: Is It A Function?

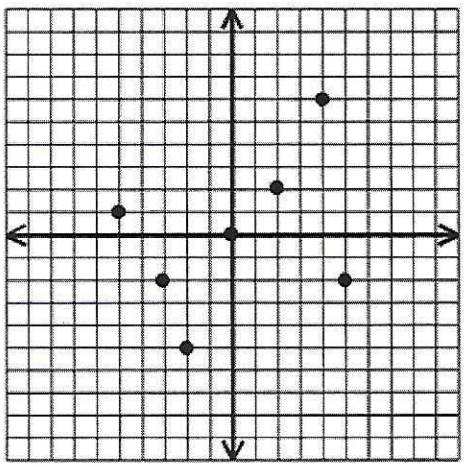
Build Your Vocabulary:

RELATION: is a set of Data Points.

Relations can be expressed in ~~four~~ six different ways:

1) Table
2) Graph
3) Mapping
4) Equation
5) Ordered Pairs
6) Verbal / Description

Example 1: Represent the relation shown in the coordinate plane as a) set of ordered pairs; b) table; and c) mapping.

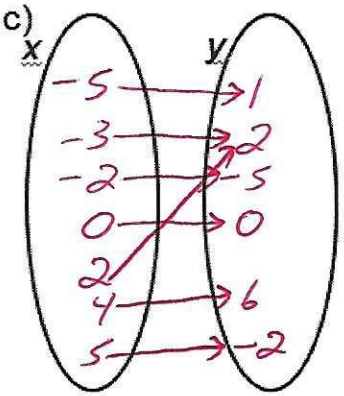


a) (-5,1) (-3,-2) (-2,-5) (0,0) (2,2) (4,6) (5,-2)

b)

x	y
-5	1
-3	2
-2	-5
0	0
2	2
4	6
5	-2

c)



The **DOMAIN** is the set of independent values in a relation. (All of the x's)

Domain in Example #1: {-5, -3, -2, 0, 2, 4, 5}

The **RANGE** is the set of dependent values in a relation. (All of the y's)

Range in Example #1: {-5, -2, 0, 1, 2, 6}

1.4 Notes: Is It A Function?

Build Your Vocabulary:

A FUNCTION: is a relation in which none of the first coordinates ___repeat___. (All of the ___x's___ are ___certain___).

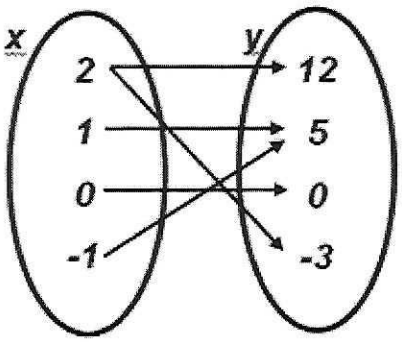
Example 2: State the relation shown as ordered pairs. State the domain and range. Then determine is it is a function.

{(2,4), (3,5), (6, 5), (-1, 3)}

D=___{2, 3, 6, -1}___; R=___{4, 5, 3}___

Function?___Yes___ (none of the x's repeat)

Example 3: State the relation shown as ordered pairs. State the domain and range. Then determine is it is a function.



Ordered Pairs: (2, 12) (2, -3) (1, 5) (0, 0) (-1, 5)
Domain: {2, 1, 0, -1}
Range: {12, -3, 5, 0}
Function? No (repeating x's)

Example 4: State the relation shown as ordered pairs. State the domain and range. Then determine if it is a function.

X	Y
-1	2
0	3
1	4
2	5
3	6

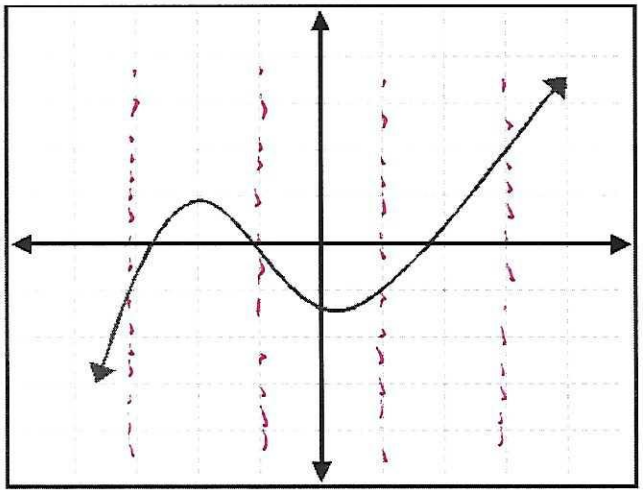
Ordered Pairs: (-1, 2) (0, 3) (1, 4) (2, 5) (3, 6)
Domain: {-1, 0, 1, 2, 3}
Range: {2, 3, 4, 5, 6}
Function? Yes

1.4 Notes: Is It A Function?

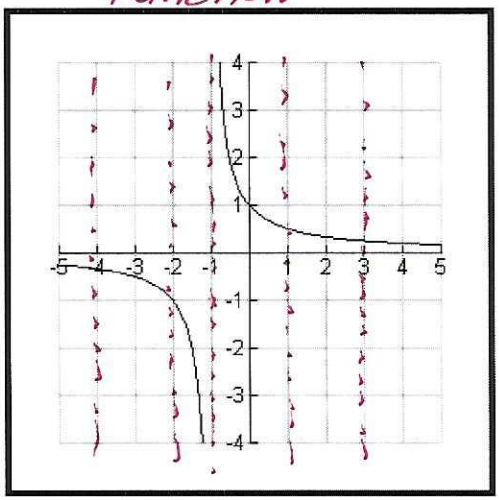
Determine whether the following are functions:

Use the Vertical Line Test to determine whether or not each graph represents a function.

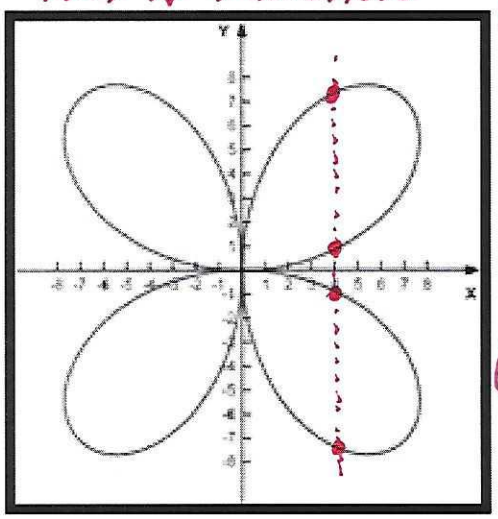
Function



Function



Not a Function



Repeats

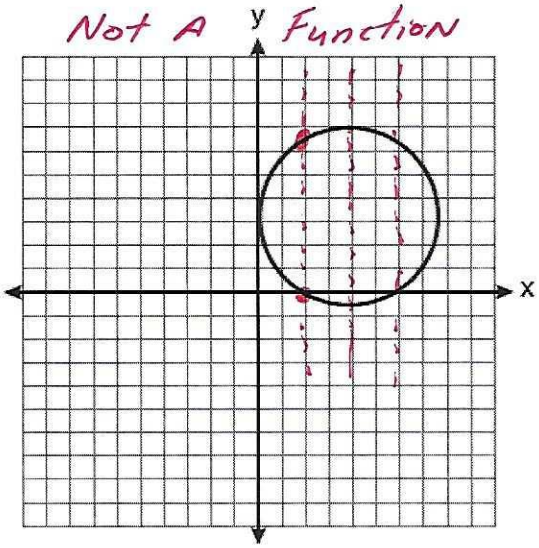
(4, 7)

(4, 1)

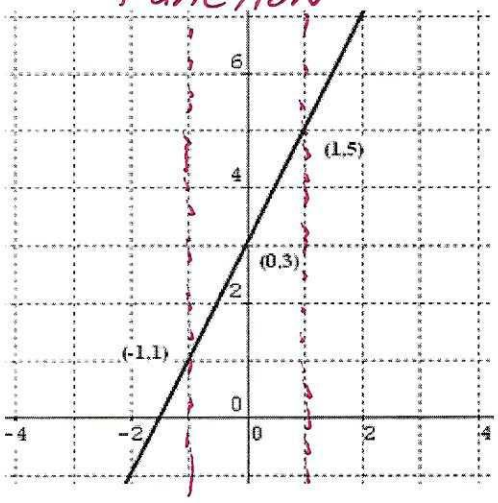
(4, -1)

(4, -7)

Not a Function



Function



Not a Function