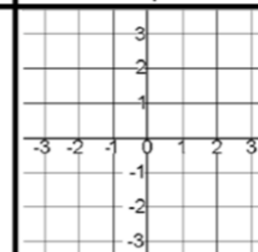
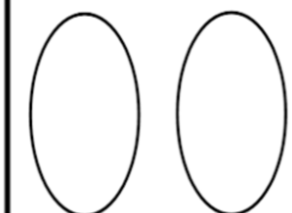
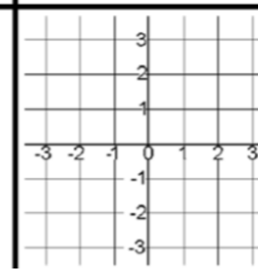
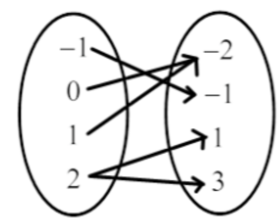
Relations & Functions

RELATION:

FUNCTION:

A relation can be represented as an equation or in these ways:

Ordered pairs	Table	Graph	Mapping Diagram
$\{(-2,3),(2,0),(-2,0),(1,3),(1,0)\}$	x | y		
	x | y		

Example 1 Function or relation only?

[1] $\{(-1,2),(0,3),(1,2),(3,1),(2,0)\}$

[2] $\{(2,-1),(3,0),(2,1),(-3,1),(1,0)\}$

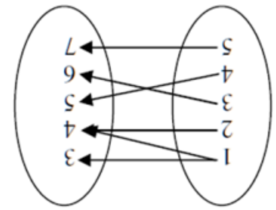
[3]

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

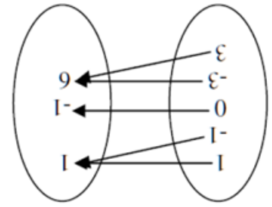
[4]

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

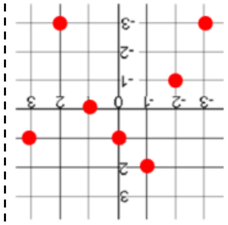
[5]



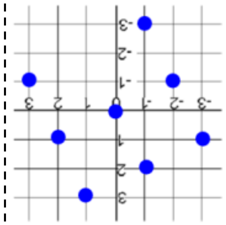
[6]



[7]



[8]

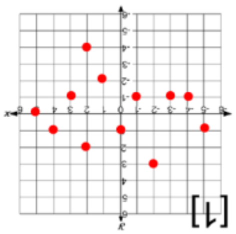


Example 2 Vertical line test

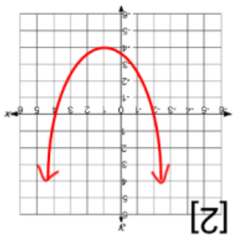
Like in the scatter plot example on the last page, if a vertical line drawn on the graph of a relation passes through more than one point, it is NOT a function.

Determine if each graph shows a function or a relation only.

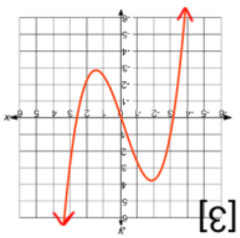
[1]



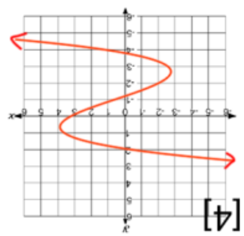
[2]



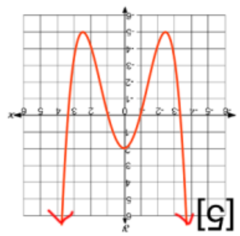
[3]



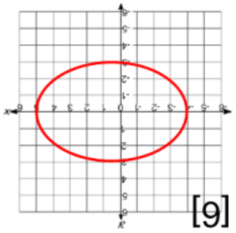
[4]



[5]



[6]

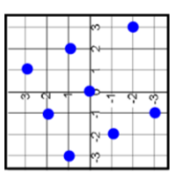


Example 3 Evaluating functions

Function notation $f(x)=y$

Reads as "f of x equals y". It means that the function named "f" has an input of x and an output of y.

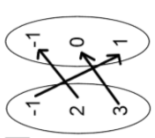
[1]



$f(3)=$ ____

$f($____$)=-1$

[2]



$f(3)=$ ____

$f($____$)=-1$

[3] $f(x)=2x+1$

$f(3)=$ ____

$f($____$)=-1$

[4] $\{(2,-1),(3,0),(2,1),(-3,1)\}$ $f(3)=$ ____ $f($____$)=-1$