

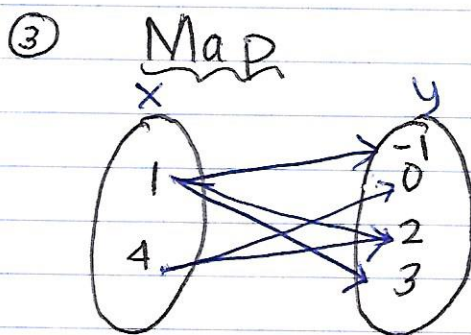
1.2 Function

Relation - two quantities that are related to each other by some rule of correspondance. (A set of ordered pairs)

Ex 1. ① $\{ (1, 3), (1, 2), (4, 2), (1, -1), (4, 0) \}$

② Table

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



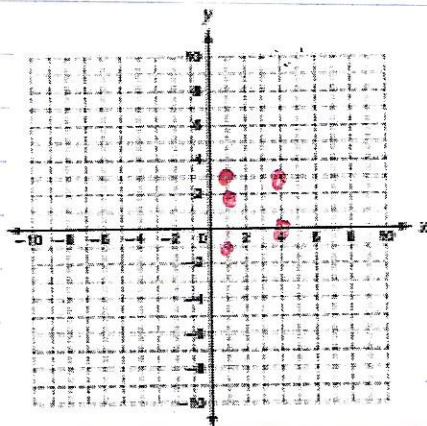
X: 1st element from the domain.
Input

Y: 2nd element from the range: (Dependent)
Output

④ Graph

Domain $\{ 1, 4 \}$ all x values

Range $\{ -1, 0, 2, 3 \}$ all y values



Function

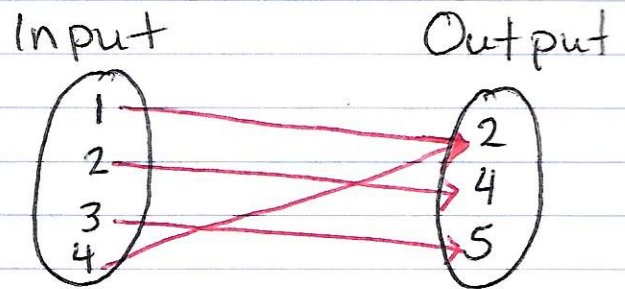
a set of ordered pairs in which each x element has only one y element associated with it.
 (Xs cannot repeat)

Ex. 2 ① $\{ (1, 2), (2, 4), (3, 5), (4, 2) \}$

② Table

X	y
4	2
3	5
2	4
1	2

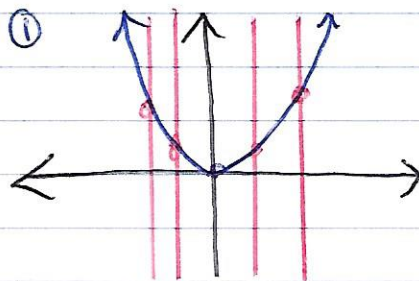
③ Map



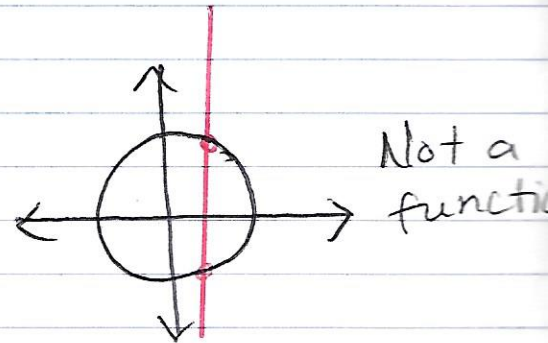
Vertical line test

- each line drawn through the graph will intersect a function in only one location.

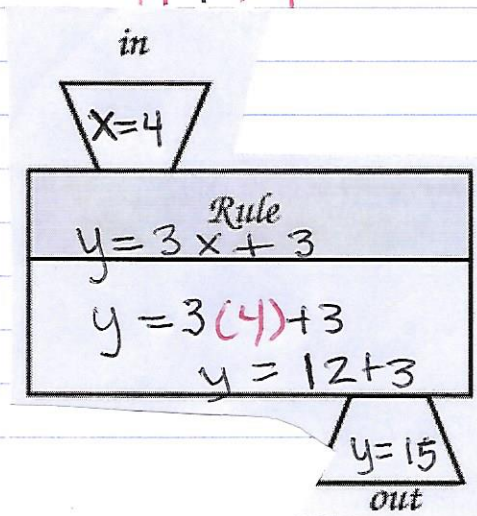
Ex 3.



②



Function Machine



$y = 3x + 3$

Input X	Output y
4	15

Ex 3.

Determine whether the equation represents y as a function of x .

①

$$\begin{array}{r} x^2 + y = 1 \\ -x^2 \quad -x^2 \\ \hline y = -x^2 + 1 \end{array}$$

Yes it's a function

Steps:

1. Solve for y
- ② Graph equation (use calculator)
- ③ Do vertical line test

②

$$\begin{array}{r} -x + y^2 = 1 \\ -x \quad -x \\ \hline \sqrt{y^2} = \sqrt{-x+1} \\ y = \pm\sqrt{-x+1} \end{array}$$

Not a function

CW p 24 # 7-25 odd +16, 29-33 odd
39, 41, 45, 49