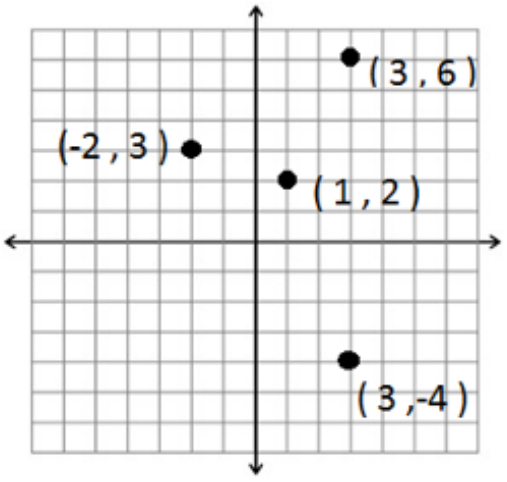
Definition of a Function

Relation: A set of ordered pairs

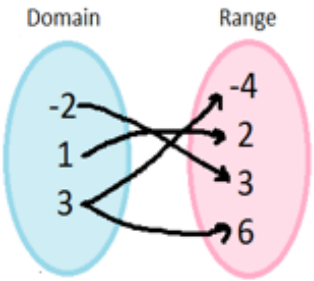
- a set of points,
  $\{(1,2),(3,6),(3,-4),(-2,3)\}$
- a graph,



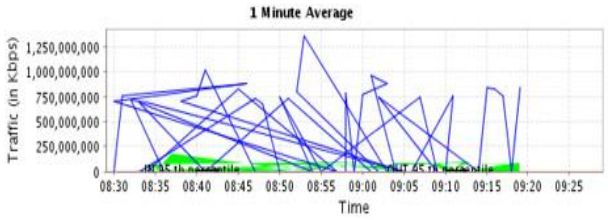
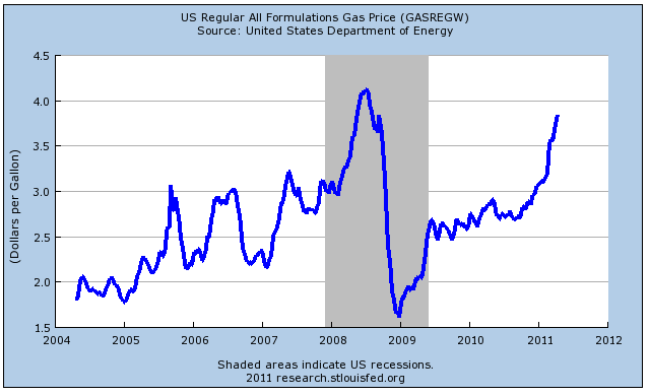
- a table of values

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

- domain/range diagram:



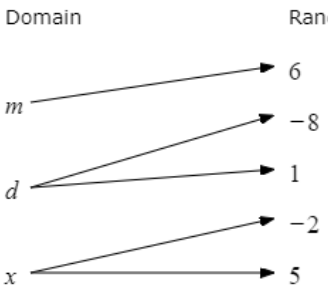
Function: a special type of relation

Not a Function	Function
	
What is wrong with this?	What's right with this? (AKA Definition of a Function)

Function or not?

$\{(1,2),\ (2,3), (3,-6),\ (2,7)\}$	$\{(1,2),\ (2,3), (3,-6),\ (7,3)\}$

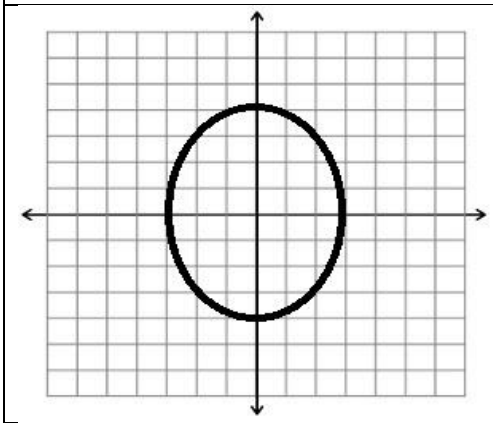
Relation 1

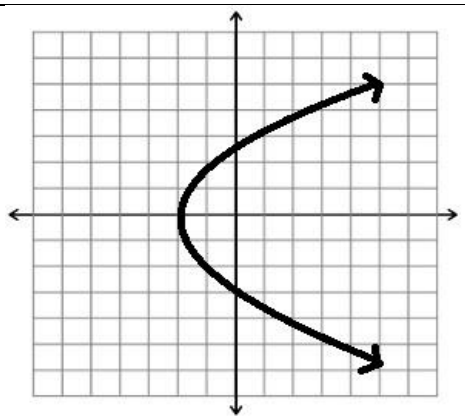


Relation 3

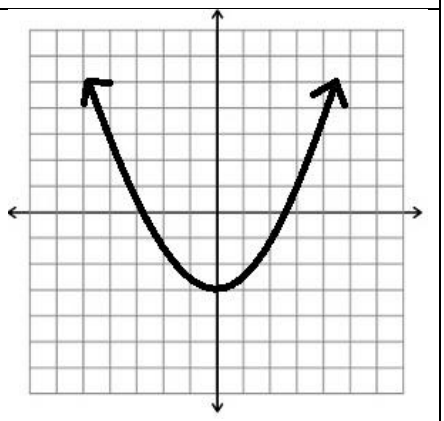
Domain	Range
m	leaf
e	leaf
f	leaf
z	leaf
d	leaf

Vertical Line test:

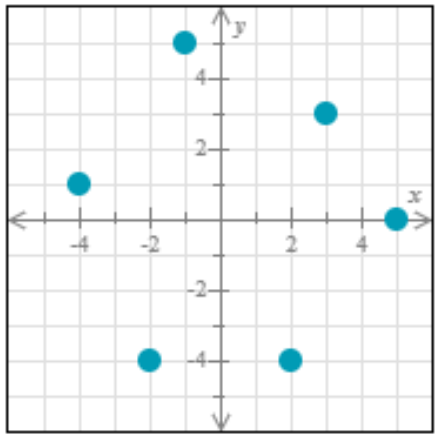




$y = 8x$



$y^2 = -2x$



$y = 7|x| - 4$

$4 = |y| + x^2$