

RELATIONS & FUNCTIONS 3rd

OBJECTIVE – RePresent Relations in various RePresentations & Determine a function from a non-function.

(x, y)

RELATION: a SET OF ORDERED PAIRS THAT CAN BE REPRESENTED IN VARIOUS WAYS

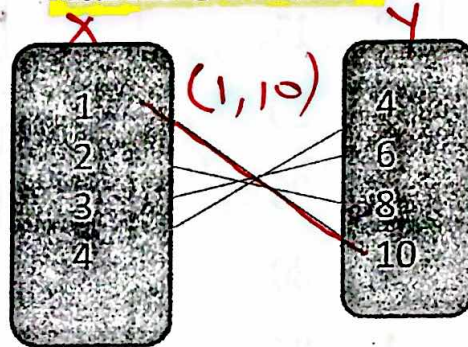
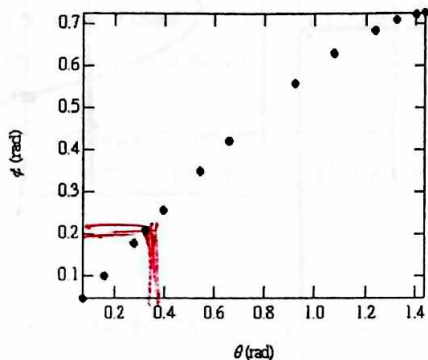
THE 3 TYPES OF RELATIONS:

TABLE:

GRAPH:

MAPPING DIAGRAM:

Place	Points
1	10
2	8
3	6
4	4

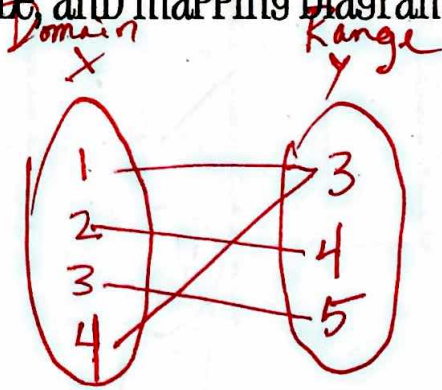
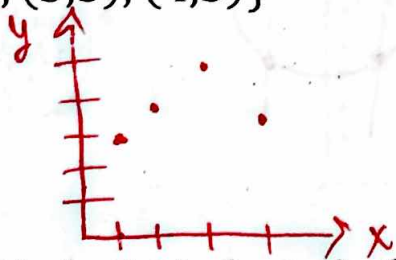


***MAPPING DIAGRAMS:** BOTH X AND Y MUST BE LISTED LEAST TO GREATEST. DRAW ARROWS FROM THE X-VALUE TO THE CORRESPONDING Y-VALUE.**

EXPRESS THE FOLLOWING RELATIONS AS A GRAPH, TABLE, AND MAPPING DIAGRAM:

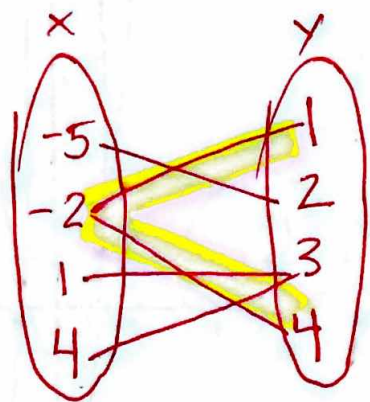
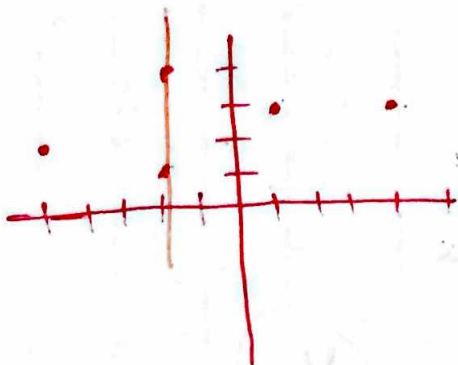
- 1) $\{(1,3), (2,4), (3,5), (4,3)\}$

X	Y
1	3
2	4
3	5
4	3



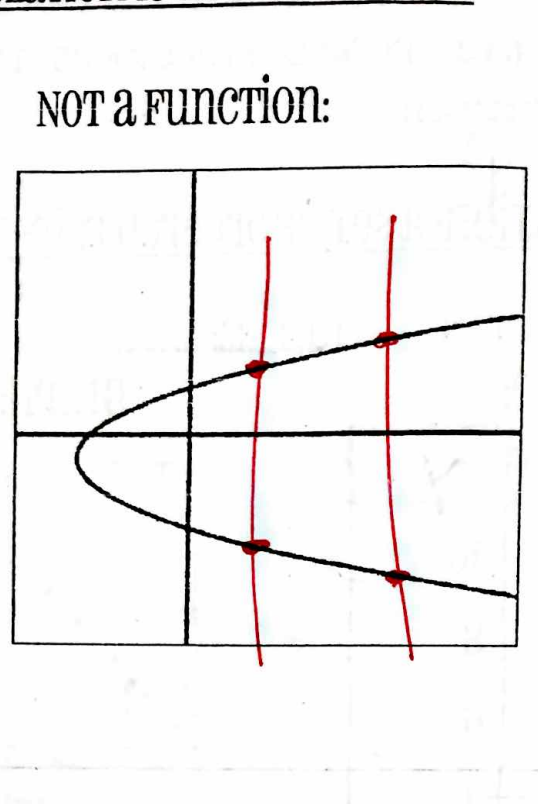
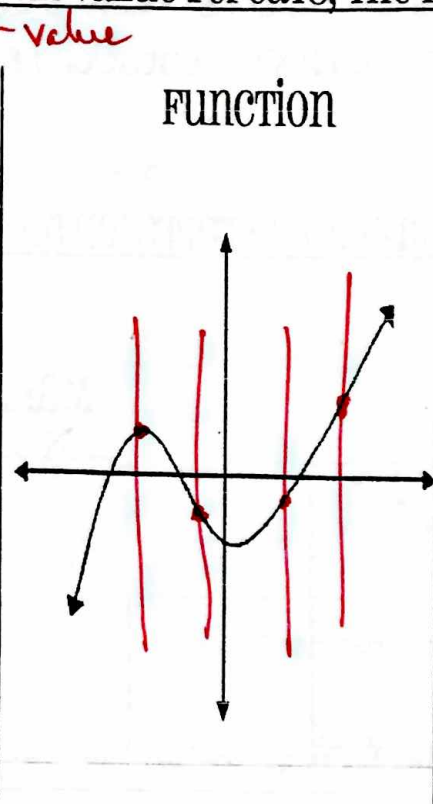
- 2) $\{(-2,1), (4,3), (-5,2), (-2,4), (1,3)\}$

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



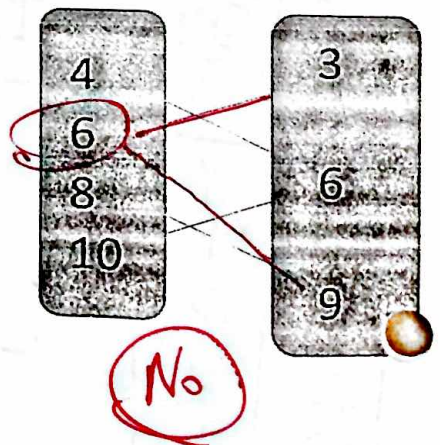
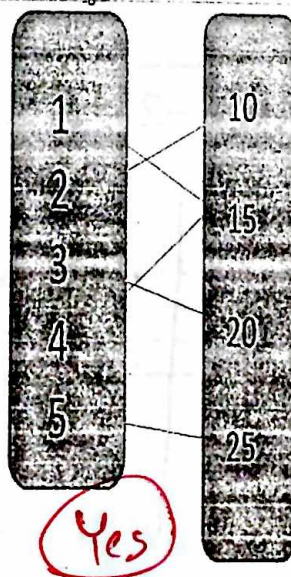
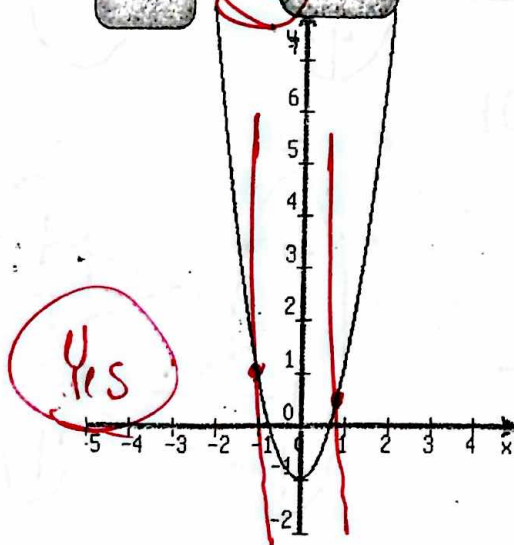
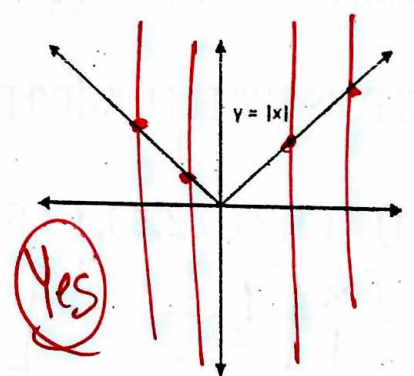
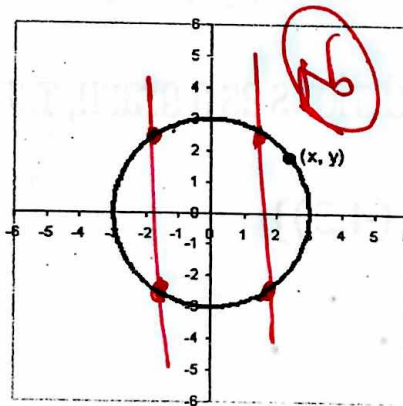
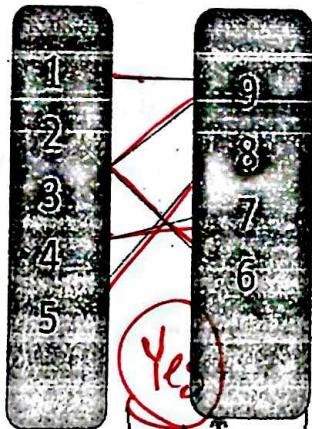
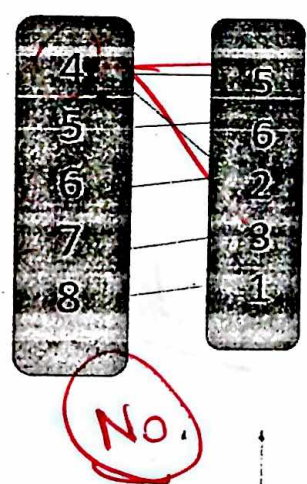
FUNCTION: a special type of relation where each domain value pairs with exactly one range value. if any domain value repeats, the relation is not a function.

FUNCTION:		NOT a FUNCTION:	
X	y	X	y
1	5	1	5
2	10	2	10
3	15	3	15
4	20	1	20
5	25	5	25
6	30	6	30
7	35	1	35



****use VERTICAL LINE TEST when using a GRAPH****

Determine if the following are functions or not: *only one point can fall on the vertical line*



Everyday we make decisions based on the effects of our actions. Our independent actions many times have reactions that are dependent on our choices. In most situations, there exists an independent variable, the value that we can change, and a dependent variable, the value that is determined by the independent variable.

x-value

y-value

For example, we know that there is a relationship between the number of hours that Sara works at Sea World in July and the amount of money she will earn on her July paycheck.

What depends on what? Does the hours working depend on the money made...or does the money made depend on the hours worked?

In this situation the independent variable, the value that Sara can directly change, is the number of hours she works. The money she earns for working that many hours determines the dependent variable.

Determine the independent and dependent variables for the following variables.

1. The number of dishes that need to be cleaned and the number of people at the party.

Independent # of people Dependent # of dishes

2. The age of a BMW and the value of the car, for the first 10 years.

Independent age Dependent value

3. The amount of Fredericksburg peaches grown and the price of peaches.

Independent # of peaches Dependent price

- ~~4.~~ The amount of food in a well-stocked refrigerator and the number of people who can eat an afternoon snack.

Independent _____ Dependent _____

5. The height of a tree and the number of years since it was planted.

Independent # of years Dependent height

5. Child's reading level between Pre-K thru 6th grade & Their shoe size

Type of Correlation None Justification _____

Independent Variable _____ Dependent Variable _____

6. The distance a student lives from school & The time it takes them to get to school

Type of Correlation positive Justification more distance, more time

Independent Variable distance Dependent Variable time

7. The distance between the water level and top of tub & The time the water has been running

Type of Correlation negative Justification more time, less distance

Independent Variable time Dependent Variable distance / water level

