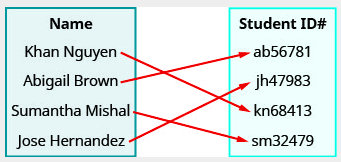
# Functions vocabulary

Relation:

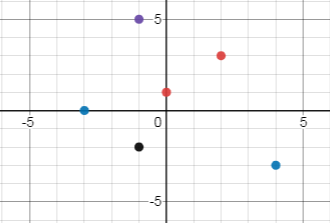
Domain:

Range:

We can represent a relation as a set of ordered pairs, a table, a map, a graph, or an equation.



MAPPING

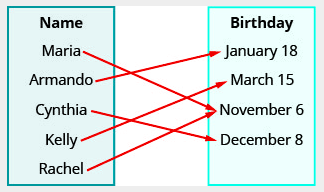


GRAPH

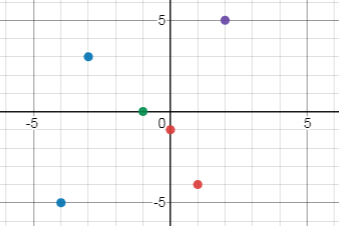
Examples: Determine the domain and range of each relation.

1)

2)



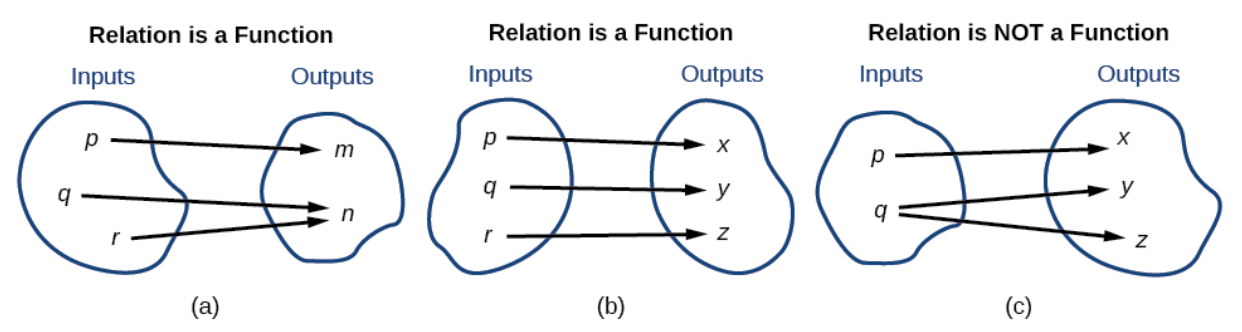
3)



# Function definition

A **function** is a relation in which each possible input value leads to exactly one output value.

Example: The following figure compares relations that are functions and relations that are not functions. Explain why each figure is or is not a function and give your reasoning.



# To determine if a relation is a function:

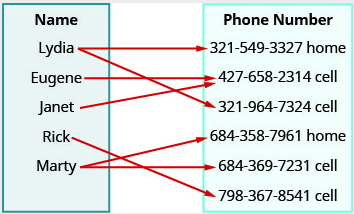
1)

2)

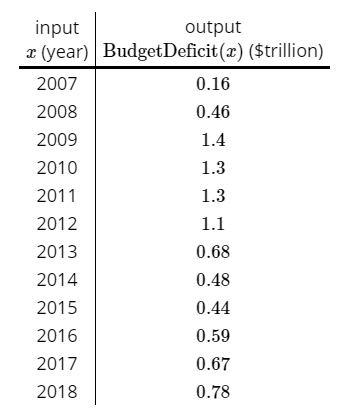
3)

Example: Determine if each relation is a function. Explain why it is or is not a function.

1)

2) 

3)



# Determining if an equation is a function

To determine if an equation represents a function, we must solve for . If each value of results in only one value of , then the equation defines a function. We say, is a function of .

Example: Determine if each equation represents a function.

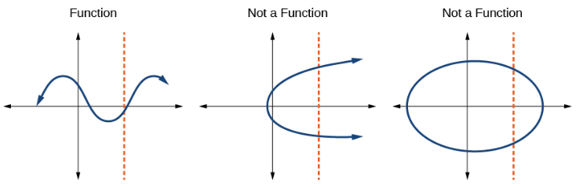
1)

2)

3)

# Vertical Line Test

If any vertical line intersects a graph more than once, then the graph does not define a function because a function has only one output value for each input value.



Example: Circle the graphs that represent functions.

