

Section 1.7 An Introduction to Functions

A **function** is a rule that establishes a relationship between the **input** and the **output**. For each input there is exactly one output. However, more than one input can have the same output.

In	Out
1	1
2	3
3	6
4	10

This is a function because each input corresponds to one output.

In	Out
1	2
2	2
3	4
4	4
5	6

This is a function because again, each input has only one output.

In	Out
1	0
1	0
2	1
3	2
4	3

This is a function because when the input is repeated it still had the same output (both inputs of 1 had a 0 output).

In	Out
1	0
1	1
2	1
3	2
4	3

This is NOT a function because the output for the input of 1 was not consistent. It had different outputs (input of 1 could have output of 0 or 1).

Domain: The domain is all of the inputs for a function.

Range: The range is all of the outputs of a function.

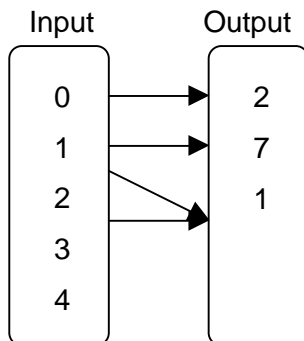
Example: What is the domain and range of following input/output table?

In	Out
1	0
2	1
3	2
7	1
9	2

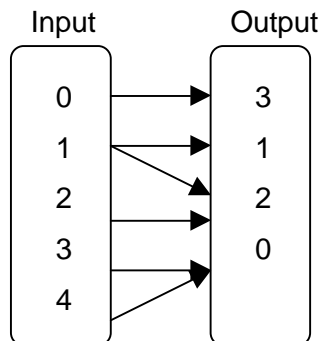
Domain: 1, 2, 3, 7, 9

Range: 0, 1, 2

Another way of showing input and output tables is show below:



Function



Not a Function