

Chapter 1

Functions and Graphs

Exercise Solution

Exercise 1.1.3

Instruction

Assuming the relation in table 1.1.

- (a) Determine the domain and the range of the relation.
- (b) State whether the relation is a function.

x	1	2	3	0	1	2	3
y	-3	-2	-1	0	1	2	3

Table 1.1: Relation between x and y in exercise 1.1.3

Solution

- (a) The domain of the relation is the set of unique x values,

$$\{0, 1, 2, 3\}.$$

The range of the relation is the set of unique y values,

$$\{-3, -2, -1, 0, 1, 2, 3\}.$$

- (b) This relation is not a function, each input is not assigned to exactly one output.
Take for example $x = 1$ that can cause both $y = -3$ and $y = 1$.

Answer

(a) Domain = $\{0, 1, 2, 3\}$, range = $\{-3, -2, -1, 0, 1, 2, 3\}$.

(b) No, not a function.