Chapter 1

Functions and Graphs

Exercise Solution

Exercise 1.1.6

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	-7	-2	-2	0	1	3	6
y	11	5	1	-1	-2	4	11

Table 1.1: Relation between x and y in exercise 1.1.6

Solution

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

$$\{-7, -2, 0, 1, 3, 6\}.$$

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

$$\{-2, -1, 1, 4, 5, 11\}.$$

(b) This relation is not a function, each input is not assigned to exactly one output. See $x = -2$, that can cause both $y = 1$ and $y = 5$.

Answer

(a) Domain = $\{-7, -2, 0, 1, 3, 6\}$, range = $\{-2, -1, 1, 4, 5, 11\}$.

(b) No, not a function.