

# Chapter 1

## Functions and Graphs

### Exercise Solution

#### Exercise 1.1.1

##### 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.

$x$	-3	-2	-1	0	1	2	3
$y$	9	4	1	0	1	4	9

Table 1.1: Relation between  $x$  and  $y$  in exercise 1.1.1

##### Solution

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

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

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

$$\{0, 1, 4, 9\}.$$

- (b) This relation is a function, each input is assigned to exactly one output.

##### Answer

- (a) Domain =  $\{-3, -2, -1, 0, 1, 2, 3\}$ , range =  $\{0, 1, 4, 9\}$ .
- (b) Yes, a function.