Some Terminology:

- Domain: Refers to the set of first elements in a relation.
  ↳ Typically "x", A.K.A. independent variable.

- Range: Refers to the set of second elements in a relation.
  ↳ Typically "y", A.K.A. dependent variable.

- A function is a special kind of relation where each element in the domain (first set) is associated with one and ONLY ONE element of the range (second set).

Ex: Determine the domain and range of the following relations, and whether or not they are functions.

(i) Relation of shapes to how many right angles they have:

{(right triangle, 1), (acute triangle, 0), (square, 4), (rectangle, 4), (regular hexagon, 0)}

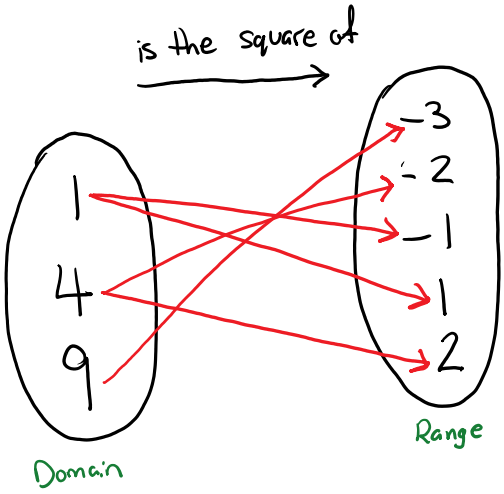
⇒ Domain (Shapes): {right triangle, acute triangle, S., r., r.h.}

Range (# of right angles): {1, 0, 4}

Because each element of the domain goes to only one

element of the range, this relation is a function.

(ii)



Domain: $\{1, 4, 9\}$

Range: $\{-3, -2, -1, 1, 2\}$

↳ More than one arrow leaves an element(s) from the domain.

∴ Not a function.

Ex: What is the domain and range of the following relation, and is it a function?

number of marbles (n)	mass of marbles in Kg (m)
1	1.27
2	2.54
3	3.81
4	5.08
5	6.35
6	7.62

Function?

↳ Yes. Each element of the domain (left) appears only once.

Domain: $\{1, 2, 3, 4, 5, 6\}$

Range: $\{1.27, 2.54, 3.81, 5.08, 6.35, 7.62\}$

Pg. 270 # 4, 5, 8, 9, 10