06/09/xx Class-XI (MATHS) K. Kanhaiya

Relations ⇒ A relation R from a non-empty set A to a non-empty set B is a subset of the Cartesian product A×B. The subset is derived by describing a relationship between the first element and the second element of the ordered pairs in A×B. The second element is called the image of the first element.

⇒ The set of all first elements of the ordered pairs in a relation R from a set A to set B is called the domain of the relation R. denoted by Dom(R).

⇒ The set of all second elements in a relation R from a set A to a set B is called Range of the relation R. The whole set B is called the Co-domain of the relation R.

Note: Range(R) ⊂ Codomain(R).

Let $A = \{1, 2, 3, 4, 5, 6\}$. Define a relation R from A to A by

(i) $R = \{(x, y) : y = x + 1\}$

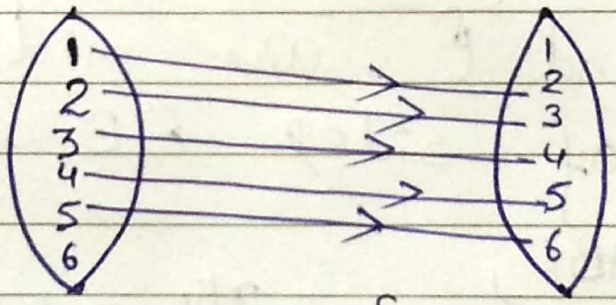
(ii) Depict this rel^n using an arrow diagram

(iii) Write down the domain, Co-domain and Range R.

Ans → (i).

$$R = \{(1,2), (2,3), (3,4), (4,5), (5,6)\}$$

(ii)



(iii) $Dom(R) = \{1, 2, 3, 4, 5\}$

$Range(R) = \{2, 3, 4, 5, 6\}$

$Co\text{-}domain(R) = \{1, 2, 3, 4, 5, 6\}$.

Solve Ex- 2.2 (1 to 5).