Q.1 Given A = {1, 2, 3, 4, 5}. Find the Relation from A to A by :

(a) $R_1 = \{(x, y) : x + y = 4 \forall x, y \in A\}$

(b) $R_2 = \{(x, y) : x + y < 6 \forall x, y \in A\}$

(c) $R_3 = \{(x, y) : x + y > 7 \forall x, y \in A\}$

Q.2 Given $A = \{x : x \text{ is an even natural number and } x \leq 10\}$ and $B = \{x : x \in N \text{ and } x \leq 10\}$. Find the relation from A to B by:

(a) $R_1 = \{(x, y) : y \text{ is divisible by } x \forall x \in A, y \in B\}$

(b) $R_2 = \{(x, y) : y > x \forall x \in A, y \in B\}$

Q.3 Given $A = \{1, 4, 7\}$ and relation $R : A \to N$, where N is set of Natural numbers. Write relation R in Roster from if

$R = \{(x, y) : x^2 + x + 7 = y \forall x \in A, y \in N\}$.