9.If

$$R_3 = \{(x, |x|)\,|\,x\}$$

is a real number is a relation, then find domain and range of

$$R_3.$$

Ans: Given: A relation

$$R_3 = \{(x, |x|)\,|\,x\}$$

is a real number.

The value of

$$x$$

represents the domain and the values of

y for all x.

Domain of

$$R_3 = \text{real number} \quad .$$

Since, the image of any real number under

$$R_3$$

is a positive real number or zero.

Range of

$$R_3 = R^+ \cup \{0\}\, or\, (0, \infty).$$

38.The ordered pair

$$(5, 2)$$

belongs to the relation

$$R = \{(x, y) : y = x - 5, x, y \in Z\}.$$

Ans: Given: Ordered pair

$$(5, 2).$$

Relation

$$R = \{(x, y) : y = x - 5, x, y \in Z\}.$$

The ordered pair must satisfy the relation.

$R = \{(x, y) : y = x - 5, x, y \in Z\}$

If $x = 5$, then

$y = 5 - 5 = 0$.

Hence,

$$(5, 2)$$

does not belong to

$$R.$$