Membership Functions:

It is a basic function that is important in fuzzy set theory. It determines how any element belongs to fuzzy sets. The basic condition for this function is that its range is between zero and one.

$$\mu_A(x):\mathrm{x} \rightarrow [0,1]$$

$$\mu_{(A)}(x) = \{\frac{\mu_{(A)}(x_1)}{x_1} + \frac{\mu_{(A)}(x_2)}{x_2} \dots\dots\dots + \frac{\mu_{(A)}(x_n)}{x_\mathrm{n}}\}$$

$$\mu_{(A)}(x) = \{\left(x_1, \mu_{(A)}(x_1)\right), \left(x_2, \mu_{(A)}(x_2)\right) \dots\dots., (x_\mathrm{n}, \mu_{(A)}(x_n))\}$$

Representation of membership functions

The representation of the membership function depends on the nature of the question under study. Below we mention the most famous methods used to represent (membership functions):

1- Graphical representation:

2- Tabular representation:

3- Analytical representation: