Example (1)

A={x: x is a letter in the English alphabet, x is a vowel}

e ∈ A (e is belong to A)   A={a,i,e,u,o}

f ∉ A (f is not belong to A)

Example (2)

X is the set {1,3,5,7,9}

3 ∈ X and 4 ∉ X

Example (3)

Let E = $\{x \mid x^2 - 3x + 2 = 0\}$ → (x-2)(x-1)=0 → x=2 & x=1

E = {2, 1}

2∈E

universal set, empty set

In any application of the theory of sets, the members of all sets under investigation usually belong to some fixed large set called the **universal set**. For example, in human population studies the universal set consists of all the people in the world. We will let the symbol **U** denotes the **universal set**.

The set with no elements is called the **empty set** or **null set** and is denoted by Ø or { }.