Example 34

Determine the elements of $D = \{x : x^2 - 8x + 7 = 0\}$ (such that)

Soln

We have

$$x^2 - 8x + 7 = 0$$
$$(x-1)(x-7) = 0$$
$$x = 1, \quad x = 7$$
$$D = \{1, 7\} = \{7, 1\}$$

$7 \in D$ is a member of the set D.

$1 \in D$.

$x \in A$ x is a member of the set A.

$x \notin A$ not a ..

Example 36

Determine $A = \{x \in \mathbb{N} : (x-3)(2x+1) = 0\}$

Soln:

$(x-3)(2x+1) = 0$

$x = 3, \quad x = -\frac{1}{2}$

1, 2, 3, 4, 5,

$A = \{3, -\frac{1}{2}\}$ ✗

$A = \{3\}$ ✓ singleton set.