**6.** Stabilește valoarea de adevăr a următoarelor enunțuri:

**a)** $2 \in \{x \mid x \in \mathbb{N}, 3 \cdot x - 1\}$;   **b)** $3 \in \{x \mid x = 2n, n \in \mathbb{N}\}$;   **c)** $0 \notin \{x \mid x \in \mathbb{N}, x^2 \leq 4\}$.

**7.** Reprezintă fiecare mulțime prin enumerarea elementelor sale:

$A = \{x \mid x \in \mathbb{N}, x < 7\}$,   $B = \{x \mid x \in \mathbb{N}, 3 \leq x < 8\}$,   $C = \{x \mid x \in \mathbb{N}, 7 \vdots x\}$,

$D = \{x \mid x \in \mathbb{N}, x + 3 = 4\}$,   $E = \{x \mid x \in \mathbb{N}^*, x - 1 \leq 2\}$.

**6a)**

$A = \{x \mid x = 3k - 1, k \in \mathbb{N}^*\}$

$\mathbb{N} = \{0, 1, 2, 3, \dots\} \Rightarrow$ mult. nr. naturale

$\mathbb{N}^* = \{1, 2, 3, \dots\} \Rightarrow$ mult. nr. naturale nenule

$\left. \begin{array}{l} 3 \cdot 1 - 1 = 2 \\ 3 \cdot 2 - 1 = 5 \\ 3 \cdot 3 - 1 = 8 \end{array} \right\} \Rightarrow$

$A = \{2, 5, 8, 11, 14, 17, 20, \dots\} \Rightarrow 2 \in A \quad (A)$

**6b)** $B = \{x \mid x = 2m, m \in \mathbb{N}\} = \{0, 2, 4, 6, 8, 10, \dots\} \Rightarrow 3 \in B \quad (F)$

**6c)** $C = \{x \mid x \in \mathbb{N}, x^2 \leq 4\} = \{0, 1, 2\}$, deoarece:

$\mathbb{N} = \{0, 1, 2, 3, 4, 5, \dots\}$   $x = 0 \Rightarrow x^2 = 0, \ 0 \leq 4$   $x = 2 \Rightarrow x^2 = 4, \ 4 \leq 4$

$x = 1 \Rightarrow x^2 = 1, \ 1 \leq 4$   $x = 3 \Rightarrow x^2 = 9, \ 9 \leq 4$ (FALS)

$0 \notin C \quad (F)$

$B = \{x \mid x \in \mathbb{N}, 3 \leq x < 8\}$,   $\Rightarrow B = \{3, 4, 5, 6, 7\}$

$E = \{x \mid x \in \mathbb{N}^*, x - 1 \leq 2\}$   $x - 1 \leq 2 \Leftrightarrow x \leq 2 + 1 \Leftrightarrow x \leq 3$

$E = \{1, 2, 3\}$

$C = \{x \mid x \in \mathbb{N}, 7 \vdots x\} \Rightarrow C = \{1; 7\} = D_7$

$7 \vdots x \Rightarrow x \mid 7 \Rightarrow x \in D_7$   $7 \mid 0, \ 7 \cdot 0 = 0$   $7 \mid 7, \ 7 \cdot 1 = 7$

$P = \{x \mid x \in \mathbb{N}, 7 \mid x\} = \{0, 7, 14, 21, 28, 35, 42, \dots\} = M_7$

...