

ببین متغیر زیرمجموعه هست

$$d) \frac{xf}{g} = f(1, -\varepsilon)(\varepsilon, -\frac{x}{\varepsilon})$$

$$-1 \text{ و } \frac{1}{\varepsilon} \rightarrow g$$

$$\textcircled{\Sigma} \text{ متغیر } (-2, 3, 2)$$

$$h = \{(x, y)(-x, y)(\varepsilon, \omega)\}$$

②

$$f(n) = \frac{\sqrt{\varepsilon n - n}}{n - 2} \quad g(n) = [n] + [-n]$$

$$\begin{aligned} & \hookrightarrow n \in \mathbb{Z} \text{ و } \frac{1}{g(n)} = \frac{1}{\frac{1}{n} + 1} \Rightarrow f(n) \\ & \hookrightarrow n \notin \mathbb{Z} \text{ و } \frac{1}{g(n)} = \frac{1}{\frac{1}{n} - 1} \Rightarrow f(n) \end{aligned}$$

$$\begin{aligned} & \downarrow \\ & 1) \sqrt{\varepsilon n} \geq 0 \quad n \geq 2 \quad 3) \textcircled{n \neq 2} \\ & 2) \sqrt{\varepsilon n - n} \geq 0 \rightarrow \varepsilon n \geq n^2 \end{aligned}$$

$$\frac{n}{\frac{1}{n} + 1} \leq 0 \quad [0, \varepsilon]$$

$$D_f = [0, \varepsilon] - \{2\}$$

$$D_{\frac{1}{g+1}} = [0, 2] - \{2\}$$

$$\textcircled{0, 1, 3} \leftarrow \text{مجموعه نهایی}$$

$$f(n) = \sqrt{\varepsilon n - n^2 - \varepsilon} \rightarrow \sqrt{-(n^2 - \varepsilon n + \varepsilon)} \rightarrow \sqrt{-(n - \frac{\varepsilon}{2})(n - 1)} \quad \frac{1}{\frac{1}{n} + 1} \quad \textcircled{6}$$

$$g(n) = \{(1, \varepsilon)(2, 2)(\varepsilon, 4)(\frac{\varepsilon}{2}, 1)\}$$

$$h(n) = \frac{f(n)}{g(n)} \rightarrow \{(1, \frac{\varepsilon}{2})(2, \frac{2}{\varepsilon})(\varepsilon, \frac{4}{\varepsilon})\}$$

$$\begin{aligned} & \text{الف } y = n^2 - 2n^2 + \varepsilon n \rightarrow y = (n-1)^2 + 1 \\ & \rightarrow \sqrt{y-1} = n-1 \rightarrow \sqrt{y-1} + 1 = n \rightarrow \textcircled{R = 1R} \end{aligned}$$

$$\sqrt{m+\varepsilon} + \sqrt{m-\varepsilon} = a + b\sqrt{m+c}$$

①

$$\sqrt{m+\varepsilon+2\sqrt{m-\varepsilon}+\varepsilon} + \sqrt{m-\varepsilon+2\sqrt{m-\varepsilon}-\varepsilon} = \sqrt{(m-\varepsilon+2)^2} + \sqrt{(m-\varepsilon-2)^2}$$

$$\begin{aligned} \Rightarrow |\sqrt{m-\varepsilon+2}| + |\sqrt{m-\varepsilon-2}| & \geq \sqrt{m-\varepsilon+2} + \sqrt{m-\varepsilon-2} \\ & = 2\sqrt{m-\varepsilon} = \frac{1}{2} + \frac{1}{2} \sqrt{m-\varepsilon} \end{aligned}$$

$$\frac{a+b}{c} = \frac{1+2}{-2} = -\frac{3}{2}$$

②

$$f(n) = \frac{1}{n-2} \text{ و } \frac{1}{g(n)} = \frac{1}{\frac{1}{n} + 1} \rightarrow \frac{(n-1)(n-2)}{1} \quad D_f = \mathbb{R} - \{2, \varepsilon\}$$

$$g(n) = \{(2, 1)(\frac{1}{2}, 0)(\varepsilon, 0)(0, \varepsilon)\} \quad D_f \cap D_g = \{2, 0\}$$

$$\begin{aligned} \frac{g}{f} & \Rightarrow D_g \cap D_f \xrightarrow{\text{دستور}} \{(2, \frac{1}{\varepsilon})(0, \frac{\varepsilon}{2})\} \\ & = \{(2, -\frac{1}{\varepsilon})(0, 4)\} \end{aligned}$$

$$\textcircled{13} \text{ متغیر نهایی } (1, 2, -1) = \text{مجموعه نهایی}$$

$$\text{الف } \frac{1}{f} \Rightarrow \{(1, 2)(\frac{\varepsilon}{2}, -1)(2, 2)(-\frac{1}{2}, 4)\}$$

⑤

$$\frac{1}{f} \Rightarrow \{(1, 2)(\sqrt{\varepsilon}, -1)(-\sqrt{\varepsilon}, -1)(2, 2)(-2, 2)\}$$

$$\begin{aligned} & \text{ب } \frac{1}{g} \Rightarrow \{(1, 2)(\sqrt{\varepsilon}, -1)(-\sqrt{\varepsilon}, -1)(2, 2)(-2, 2)\} \\ & \text{ج } \frac{1}{g^2(n)+1} \xrightarrow{n=2} \begin{cases} 2(9)+1=19 \\ 2(1)+1=3 \\ 2(4)+1=9 \end{cases} \rightarrow \{(-1, 19)(1, 3)(4, 9)\} \end{aligned}$$

$$\begin{aligned} \text{ب) } \frac{1}{m^2 - 2m} y &\rightarrow y^2 - 2my = 1 \\ y^2 - 2my - 1 &= 0 \quad \Delta = 4y^2 + 4y \\ m &= \frac{2y \pm \sqrt{4y^2 + 4y}}{2} = y \pm \sqrt{y^2 + y} \\ \text{ب) } y &\neq 0 \end{aligned}$$

$$R = (-\infty, -1] \cup (0, +\infty)$$

مفرد

$$\text{الف) } \min \left| \begin{array}{l} -\frac{b}{2a} = \frac{-1}{2} = -\frac{1}{2} \\ \Delta = 1 - 4 = -3 \end{array} \right| \quad [4, +\infty) = R$$

$$\text{ب) } \max \left| \begin{array}{l} -\frac{b}{2a} = \frac{-4}{-1} = 4 \\ \Delta = 16 - 4 = 12 \end{array} \right| \quad (-\infty, 12] = R$$

$$\text{ج) } \min \left| \begin{array}{l} -\frac{b}{2a} = \frac{-1}{2} = -\frac{1}{2} \\ \Delta = 1 - 4 = -3 \end{array} \right| \quad [0, +\infty) = R$$

$$\text{د) } \max \left| \begin{array}{l} -\frac{b}{2a} = \frac{-4}{-1} = 4 \\ \Delta = 16 - 4 = 12 \end{array} \right| \quad (-\infty, 4] = [0, 4] = R$$

$$\text{الف) } = \mathbb{R} \quad \text{ب) } \mathbb{R} \quad \text{ج) } \sqrt{\mathbb{R}} = [0, +\infty)$$

$$\text{د) } y = (m^2 - 2m + 1)^2 \rightarrow \sqrt{y} = (m^2 - 2m + 1) = (m-1)^2 \geq 0$$

$$\text{الف) } \mathbb{R} - \frac{a}{c} = \mathbb{R} - \{c\} \quad \text{ب) } \mathbb{R} - \frac{a}{c} = \mathbb{R} - \{c\} \quad (1)$$

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