

$$f(n) + g(n) = \sqrt{n + \sqrt{n-4}} + \sqrt{n \cdot \sqrt{n-4}} \quad (1)$$

$$\rightarrow 2n + 2\sqrt{n^2 - 4(n-4)} = 2n + 2\sqrt{n^2 - 4n + 16} = 2n + 2(n-4) = 4n - 8$$

$$f(n-4) = (a+b\sqrt{n-4}+c)^2 \Rightarrow a+b\sqrt{n-4}+c = \sqrt{n-4} \Rightarrow \begin{cases} a=0 \\ b=1 \\ c=0 \end{cases} \Rightarrow \frac{2}{-4} = -\frac{1}{2}$$

$$f(n) = \frac{n+2}{(n-1)(n-3)} \Rightarrow (1, \frac{4}{2}), (2, \frac{5}{2}), (3, \frac{6}{2}), (4, \frac{7}{2})$$

$$g = \left\{ (1, \frac{1}{2}), (2, -\frac{1}{2}), (3, \frac{1}{2}), (4, -\frac{1}{2}) \right\}$$

$$h = \left\{ (-2, 4), (1, 3), (2, 9), (-1, 1) \right\}$$

$$h = \left\{ (2, 5), (3, 5), (-2, 4) \right\}$$

$$[n] + [-n] \xrightarrow{\text{تلفیق شده}} -1 \Rightarrow g(n) = 0 \Rightarrow n \in \mathbb{Z}$$

$$\sqrt{2n} - n \geq 0 \Rightarrow n - \sqrt{2n} \leq 0 \Rightarrow t = \sqrt{2n} \leq 0 \Rightarrow \frac{0}{+1-1+1}$$

$$\Rightarrow 0 < \sqrt{2n} \leq \sqrt{2} \Rightarrow 0 < n \leq 2, n \neq 1 \Rightarrow D_f = \{0, 1, 2\}$$

$$f(n) = \sqrt{-(n-1)(n-4)}$$

$$h(n) = \left\{ (1, 0), (2, \frac{\sqrt{2}}{2}), (3, 0) \right\}$$

$$\text{الف) } y = (x-1)^3 + 1 \Rightarrow y-1 = (n-1)^3 \Rightarrow n-1 = \sqrt[3]{y-1} \Rightarrow n = 1 + \sqrt[3]{y-1}$$

$$\text{ب) } y/(n^2-2n) = 1 \Rightarrow n^2-2n = \frac{1}{y} \Rightarrow n = 1 \pm \sqrt{1 + \frac{1}{y}} \Rightarrow \frac{1}{y} \geq 0$$

$$\text{الف) } \left| \frac{1}{y} \right| \Rightarrow \mathbb{R} \setminus [4, +\infty) \quad \text{ب) } \left| \frac{1}{y} \right| \Rightarrow [4, +\infty) \cup [0, +\infty)$$

$$\text{ب) } \left| \frac{1}{y} \right| \Rightarrow \mathbb{R} \setminus [-\infty, 12] \quad \text{د) } \sqrt{n^2 + \frac{1}{n}} \Rightarrow \left| \frac{1}{n} \right| \Rightarrow [-\infty, 9] \Rightarrow [0, 2]$$

$$\text{الف) } \rightarrow \mathbb{R} \setminus \{2\}$$

$$\text{ب) } \rightarrow \mathbb{R} \setminus \{2\}$$