

برای $n \geq 1$ با $\frac{1}{n}$ ضرب

$$g(n) = \sqrt{n - \varepsilon} \sqrt{n - \varepsilon}$$

$$f(n) = \sqrt{n + \varepsilon} \sqrt{n - \varepsilon}$$

$$f(n) + g(n) = a + b\sqrt{n+c}$$

آزمین ۱۹,۲۵

$$p = \frac{a+b}{c}$$

$$(\sqrt{n+\varepsilon}\sqrt{n-\varepsilon} + \sqrt{n-\varepsilon}\sqrt{n-\varepsilon}) = \sqrt{n^2-14n+4\varepsilon} + 2\sqrt{n^2-14n+4\varepsilon}$$

$$2n + 2\sqrt{n^2-14n+4\varepsilon} \xrightarrow{n \geq 1} 2n - 14 = 8^2$$

$$\sum (n - \varepsilon) = 8^2 \quad 8 = 2\sqrt{n - \varepsilon}$$

$$a=0 \quad b=2 \quad c=-\varepsilon$$

$$\frac{0+2}{-\varepsilon} = -\frac{1}{\varepsilon}$$

$$g(n) = \sum_{k=1}^n (2,1), (1,0), (0,0), \dots, (0,\varepsilon) \quad f(n) = \frac{n+2}{n^2-\varepsilon n+2}$$

$$f(n) = \frac{n+2}{(n-1)(n-3)}$$

عامل $\frac{g}{f}$ در ۳ تعریف می شود

پس فقط $n=0$ و $n=2$ است

$$(2,1) \rightarrow g$$

$$f(2) = \frac{2}{-1} = -2$$

$$(2, -\frac{1}{\varepsilon}) \rightarrow \frac{2, g(2)}{f(2)} = \frac{1}{-2}$$

$$(0, \varepsilon) \quad f(0) = \frac{2}{3}$$

$$\frac{g(0)}{f(0)} = \frac{\varepsilon}{\frac{2}{3}} = \frac{3\varepsilon}{2}$$

$$\sum_{k=1}^n (2, -\frac{1}{\varepsilon}), (0, \frac{3\varepsilon}{2}) = \text{حاصل}$$

$$g(n) = \sum_{k=1}^n (-2,3), (1,1), (3,2), (-1,0) \quad f(n) = \sum_{k=1}^n (1,2), (3,1), (4,2), (-1,4)$$

$$f(n) = \sum_{k=1}^n (\frac{1}{2}, 2), (\frac{3}{2}, -1), (2, 2), (-\frac{1}{2}, 4)$$

$$f(n^2) = \sum_{k=1}^n (-2,2), (2,2), (1,2), (-1,2), (\sqrt{3}-1, \sqrt{3}-1)$$

$$g^2(n) + 1 = \sum_{k=1}^n (-2,19), (1,3), (2,9), (-1,1)$$

$$r \frac{f}{g} = \sum_{k=1}^n (-1, \frac{\pi}{0}), (3, -\frac{1}{2}), (1, -2)$$

$$g = \left\{ (0,1), (2,3), (-2,4), (-1,5) \right\} \quad f(x) = \left\{ (2,1), (3,1), (4,9), (-2,0) \right\}$$

$$h = r \circ f \circ g$$

$$h = \left\{ (2,1), (3,1), (4,9), (-2,0) \right\}$$

$$f\left(\frac{f}{g+1}\right)(n)$$

$$f(n) = \frac{-8}{\sqrt{3n-n}} \quad g(n) = [n] + [-n]$$

$$① \quad g(n) \rightarrow \begin{cases} 0 & n=2 \\ -1 & n \neq 2 \end{cases}$$

$$② \quad Df = \sqrt{3n} - n \geq 0$$

$$\sqrt{3n} \geq n$$

$$3n \geq n^2$$

$$3n - n^2 \geq 0$$

$$n(3-n) \geq 0$$

$$Df = [0, 3] - \{2\}$$

باید صریح
نم باشد

$$= \{0, 1, 3\} = D$$

$$h(n) = \frac{f(n)}{g(n)}$$

خارج هم نباید صفر شود پس $n \neq 2$

$$f(n) = \sqrt{5n - n^2 - 2} \quad g(n) = \left\{ (1,2), (2,2), (4,9), (0,1) \right\}$$

$$-(n^2 - 5n + 2) \geq 0$$

$$-(n-1)(n-4) \geq 0$$

$$-n^2 + 5n - 2 \geq 0 \quad f(n) \text{ باشد } (I)$$

$$\begin{array}{c|c|c} 1 & 2 & \\ \hline + & + & + \\ \hline - & - & - \end{array}$$

$$1 \leq n \leq 4$$

$$h(n) = \left\{ (1,0), (2,\frac{\sqrt{2}}{2}), (4,0) \right\}$$

مستترها = ۲ و ۴

$$y = n^3 - 3n^2 + 3n$$

بردار باید به روش اصلی بدست بیاید!

$$Rf = R$$

۷- بردار به روش اصلی بدست بیاید؟

$$b) = \frac{1}{n^2 - 3n}$$

$$n^2 - 3n = \frac{1}{y}$$

$$\frac{1}{y}$$

$$(n-1)^2 - 1 = \frac{1}{y}$$

$$1 + \frac{1}{y} = (n-1)^2$$

$$R = (-\infty, 1] \cup$$

$$1 + \frac{1}{y} \geq 0$$

$$\frac{1+y}{y} \geq 0$$

$$\begin{array}{c|c|c} -1 & 0 & \\ \hline + & - & + \end{array}$$

$$(-\infty, 0) \cup$$

$$a) y = x^2 - 2x + 10$$

$$x^2 - 2x + 10 = 9$$

$$\frac{-b}{2a} = x_s$$

$$\frac{-(-2)}{2} = 1$$

$$R_1 = [9, +\infty)$$

۱- برآیند

$$b) y = -x^2 + 4x + 3$$

max

$$\frac{-4}{2} = -2$$

$$-9 + 16 + 3 = 10$$

$$(-\infty, 10] = R$$

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$$c) y = \sqrt{x^2 - 2x - 3}$$

min

$$\frac{-(+2)}{2} = -1$$

$$x^2 - 2x - 3 = -4$$

$$\sqrt{[-4, +\infty)}$$

$$= [0, +\infty)$$

$$d) y = \sqrt{4x - x^2}$$

max

$$\frac{-4}{2} = -2$$

$$16 - 4 = 12$$

$$R = \sqrt{(-\infty, 12]}$$

$$= [0, 3]$$

$$الف) y = 9x^2 - 8x^2 + 2x + 1$$

$$R_1 = R$$

۳- برآیند

$$ب) y = x^4 - 4x^2 + 2x + 5$$

$$R_1 = R$$

$$c) y = \sqrt{x^4 - 4x^2 + 5x + 1}$$

$$\sqrt{R_1}$$

$$[0, +\infty)$$

$$د) y = \underbrace{(x^5 - 2x^2 + 2x + 1)}_R$$

$$R^2 = [0, +\infty)$$

$$y = \frac{2x+1}{x-2}$$

$$x = -\frac{-2y-1}{y-2} =$$

$$\frac{2y+1}{y-2} = x$$

$$y \neq 2$$

$$R = \{2\}$$

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$$ب) y = \frac{2x+1}{x+1}$$

$$y \neq -1$$

$$\frac{y-1}{y+1} = -1$$

$$= \frac{1-y}{y+1}$$

$$y \neq -1$$

$$R = \{-1\}$$

$$f(n) = \frac{\sqrt{\sqrt{r}n} - n}{n - r} \rightarrow \begin{cases} n \neq r \\ n \geq 0 \end{cases} \begin{cases} (\sqrt{r}n) \\ \sqrt{r}n - n \geq 0 \rightarrow rn \geq n^2 \rightarrow 0 \leq n \leq r \end{cases} \rightarrow D_f = [0, r] - \{r\} \quad (\infty)$$

$$g(n) + 1 \neq 0 \rightarrow g(n) \neq -1 \rightarrow [n] + [-n] \neq -1 \rightarrow n \in \mathbb{Z}$$

$$D_{\frac{f}{g+1}} = \left\{ D_f \cap D_g, g(n) \neq -1 \right\} = \left\{ 0, 1, r \right\}$$

$[0, r] - \{r\} \cap \mathbb{Z}$