

14, 15

بازدهم بر A - تکلیف

کد صالح تفتی

$$f(n) = 4$$

$$g(n) = 0 \rightarrow \xi = a + b\sqrt{A+c}$$

$$\underline{a+b} = ?$$

$$\rightarrow \xi = b\sqrt{A+c} - b\sqrt{A+c}$$

$$f(n) = 5$$

$$g(n) = 2$$

$$\rightarrow n = a + b\sqrt{A+c}$$

$$\text{یعنی } b(\sqrt{A+c} - \sqrt{A+c})$$

$$f = \{(2, -4), (0, \frac{5}{2})\} \rightarrow f = \{(2, -\frac{1}{2}), (0, 5)\}$$

$$\text{الف) } f(n) = \{(1, 2), (\frac{5}{2}, -1), (2, 2), (-\frac{1}{2}, 5)\}$$

$$ب) = \{(1, 2), (5, -1), (2, 2), (-5, -1), (-2, 2)\}$$

$$g(-2) = 3 \rightarrow g(-2) = 9 \rightarrow 2g(-2) = 18$$

$$ج) = \{(-2, 1), (1, 3), (2, 9), (-1, 1)\}$$

$$د) = \{(1, -4), (2, 1)\} \quad 2g(-2) + 1 = 19$$

$$2, 2, 0 - 3, 4, 3$$

$$= \{(2, 0), (2, 4), (-2, 2)\}$$

$$\text{برای } \frac{f}{g+1}(n) \rightarrow n = \mathbb{Z} - \{2\}, \quad n > 0 \rightarrow n \geq 0$$

$$\rightarrow g+1 \neq 0 \rightarrow g \neq -1 \rightarrow \text{اعداد صحیح قبول نیست}$$

توان 2 ندارد!

$$\rightarrow n \geq 0 \rightarrow n^2 \geq 0 \rightarrow$$

$$n^2 - n \leq 0 \rightarrow 0 \leq n \leq 1 \quad [0, 1] - \{2\}$$

$$\{0, 1\}$$

$$\frac{1}{-p+p} \rightarrow [1, 4] \rightarrow h(n) = \{(1, 0), (2, \sqrt{3})\} \quad (1)$$

$$y = (n-1)^3 + 1 \rightarrow \sqrt[3]{y-1} = n-1 \quad (2)$$

$$\hookrightarrow n = 1 + \sqrt[3]{y-1} \rightarrow \mathbb{R} \rightarrow \mathbb{R} \quad (1)$$

$$? y = (-\infty, -1] \cup (0, 4 \infty)$$

$y=0$  در برنیت! اصل؟

$$(الف) a) \rightarrow \mathbb{R}_f = (-1, +\infty) \quad (A)$$

$$ب) y: a) \rightarrow \max \{ \dots \} \rightarrow \mathbb{R}_f = (-1, 1] \quad (1)$$

$$ج) \min \{ \dots \} \rightarrow [1, +\infty) \rightarrow \mathbb{R}_f = [1, +\infty) \quad (1)$$

$$د) [-\infty, 9] \rightarrow [0, 3] \quad (1)$$

$$(الف) \mathbb{R}_f = \mathbb{R} \quad (9)$$

$$ب) \mathbb{R}_f = \mathbb{R} \quad (1)$$

$$ج) \mathbb{R}_f = \mathbb{R} \rightarrow \mathbb{R}_f = \mathbb{R} = [0, +\infty) \quad (1)$$

$$د) \mathbb{R}_f = [0, +\infty)$$

$$(الف) \frac{x_n+1}{n-2} = y \rightarrow n = -\frac{-y-1}{y-2} \rightarrow \mathbb{R}_f = \mathbb{R} - \{2\} \quad (1)$$

$$ب) \frac{x_n+1}{n-1} = y \rightarrow n = \frac{y-1}{y-2} \rightarrow \mathbb{R}_f = \mathbb{R} - \{2\}$$

$$f(n) = \sqrt{x-r+r\sqrt{n-r}+r} = \sqrt{(\sqrt{n-r}+r)^2} = |\sqrt{n-r}+r| = \sqrt{n-r}+r \quad (1)$$

$$g(n) = \sqrt{x-r-r\sqrt{n-r}+r} = \sqrt{(\sqrt{n-r}-r)^2} = |\sqrt{n-r}-r| \xrightarrow{n \geq 1} \sqrt{n-r}-r$$

$$f(n)+g(n) = \sqrt{n-r}+r+\sqrt{n-r}-r = 2\sqrt{n-r} \xrightarrow{\begin{matrix} a=0 \\ b=r \\ c=-r \end{matrix}} \frac{a+b}{c} = \frac{r}{-r} = -\frac{1}{r}$$

$$f(rn) = \left\{ \left(\frac{1}{r}, 2\right) \left(\frac{r}{r}, -1\right) (2, 2) \left(-\frac{1}{r}, 4\right) \right\} \quad n \text{ های } f \text{ باید قسیم بر ۲ باشند!} \quad (2)$$

$$f(r^2n) = \left\{ (1, 2) (-1, 2) (\sqrt{r^2}, -1) (-\sqrt{r^2}, -1) (2, 2) (-2, 2) \right\} \quad \text{هرکدام از } n \text{ های } f \text{ را برابر } r^2 \text{ قرار دهیم!}$$

$$2g(rn)+1 = \left\{ (-2, 19) (1, 3) (3, 9) (-1, 1) \right\} \quad \text{این عمل ردی و های و اعمال می شود!}$$

$$\frac{2f}{g} = \left\{ \left(1, \frac{2 \times 2}{-1}\right) \left(3, \frac{2 \times -1}{r}\right) \text{ و } \left(-1, \frac{2 \times 4}{-}\right) \right\} = \left\{ (1, -4) (3, -1) \right\}$$

$$f(n) = \frac{\sqrt{\sqrt{3n}-n}}{n-r} \rightarrow \begin{cases} n \neq r \\ n \geq 0 \end{cases} (\sqrt{3n}) \rightarrow Df = [0, 3] - \{r\} \quad (3)$$

$\sqrt{3n}-n \geq 0 \rightarrow 3n \geq n^2 \rightarrow 0 \leq n \leq 3$

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

$$D \frac{f}{g+1} = \left\{ Df \cap Dg, g(n) \neq -1 \right\} = \left\{ 0, 1, 3 \right\}$$

$[0, 3] - \{r\} \cap \mathbb{Z}$

(الف)  $y = n^3 - 2n^2 + 2n - 1 + 1 = y = (n-1)^3 + 1$  (v)

$$y-1 = (n-1)^3 \rightarrow \sqrt[3]{y-1} = n-1 \rightarrow n = \sqrt[3]{y-1} + 1$$

$R_f = \mathbb{R}$

(ب)  $y = \frac{1}{n^2 - 2n} \rightarrow n^2 y - 2n y = 1 \rightarrow n^2 y - 2n y - 1 = 0$

$y \neq 0 \rightarrow n = \frac{2y \pm \sqrt{4y^2 + 4y}}{2y} \rightarrow 4y(y+1) \geq 0 \rightarrow \frac{-1}{\frac{1}{4} - \frac{1}{4} + \frac{1}{4}}$

$y = 0 \rightarrow 0 = 1 \times$  صفتين وجدنا!  $\rightarrow R_f = (-\infty, -1] \cup (0, +\infty)$