

19/20

تلف 1 نویدامنی

1

الف) g

$$\begin{aligned} (ny_1) \in f &\rightarrow y_1 = y_2 \\ (ny_2) \in f &\end{aligned}$$

2

$$\left\{ \begin{aligned} g_1 &= kn^k + n-1 \\ g_2 &= kn^k + n-1 \end{aligned} \right\} \quad g_1 = g_2 \rightarrow y_1 = y_2 \rightarrow \text{تابع واحد} \checkmark$$

$$ب) \quad x = \frac{\pi}{4} + \frac{\pi}{4} \cos y = y \cos \frac{\pi}{4} \rightarrow \cos y = 0 \rightarrow y = 0, \pi, 2\pi, \dots \rightarrow \text{تابع نیست} \checkmark$$

$$ج) \quad \left(\frac{x+y}{2} \right)^2 = (\sqrt{xy})^2 \rightarrow x^2 + y^2 + 2xy = 4xy, \quad x^2 + y^2 - 2xy = 0 \rightarrow (x-y)^2 = 0 \rightarrow x = y \rightarrow \text{تابع واحد} \checkmark$$

$$د) \quad x(y+2) - y(y+2) = (x-y)(y+2) = 0 \rightarrow x = y \rightarrow \text{تابع واحد} \checkmark$$

$$|x-1| \geq 2 \rightarrow \begin{aligned} x-1 \geq 2 &\quad x-1 \leq -2 \\ x \geq 3 &\quad x \leq -1 \end{aligned}$$

2

$$\left. \begin{aligned} f(-1) &= f(-1) \\ \downarrow &\quad \downarrow \\ \text{مقادیر} &\quad \text{مقادیر} \end{aligned} \right\} \rightarrow 2(-1)^2 - b = a + (-1) = 2 - b = a - 1 \rightarrow a + b = 2 \checkmark$$

$$O_f = [b, a] \rightarrow f(a) = f(b) = 0 \rightarrow \sqrt{a - b(b) - b^2} = \sqrt{a - ab - a^2} = 0$$

$$\begin{aligned} -2b^2 + a &= 0 \\ \checkmark a &= 2b^2 \end{aligned}$$

2

$$\star \rightarrow 2b^2 - (2b^2)b - (2b^2)^2 = 2b^2 - 2b^3 - 4b^4 = 0 \quad b^2(-4b^2 - 2b + 2) = 0$$

$$b = 0 \rightarrow a = 0 \rightarrow \text{مقادیر} \times$$

$$\begin{aligned} -4b^2 - 2b + 2 &= 0 \rightarrow 2b^2 + b - 1 = 0 \rightarrow (b+1)(b-1) = 0 \\ b &= 1, \quad b = -1 \\ b \in \mathbb{Z} &\rightarrow b = -1 \checkmark \end{aligned}$$

$$\begin{aligned} a &= 2 \\ b &= -1 \rightarrow a + b = 1 \end{aligned}$$

4

②

$$b \times 0 \checkmark \rightarrow a = 0, p = 1, c = 0$$

5
1,00

$$\sqrt{n} \leq 9 \rightarrow n \leq 81$$

$$\sqrt{n} \leq 9 \rightarrow n \leq 81$$

[illegible]

1,5

$\Rightarrow) \lim_{x \rightarrow 0} \frac{1}{9 + \sqrt{|x|} - |x|} \rightarrow 9 + \sqrt{|x|} - |x| \neq 0 \quad \frac{|x|=t}{t > 0} \rightarrow -t^2 + t + 9 \neq 0$
 $t > 0$ سے عبارت $\sqrt{|x|}$ است $t^2 - t - 9 \neq 0 \rightarrow (t-3)(t+3) \neq 0$ ✓
 $t \neq 3, t \neq -3$
 $|x| \neq 9 \quad |x| \neq -9 \rightarrow$ ہرگز
 $x \neq \pm 9$ ☆☆ ہرگز
 $\Rightarrow D_f = (\mathbb{R} - \{\pm 9\})$
 $\frac{-2}{-1+1-}$
 $\sqrt{|x|} < 3$
 $-9 < x < 9$

نویسنده کی تکلیف ۱

نوید امینی کالیف

$$\frac{\mu n + \nu}{n+b} + a \geq 0 \rightarrow \frac{\mu n + \nu + a n + a b}{n+b} \geq 0$$

مخرج همواره مثبت است
پس با توجه به فرض مسئله صورت ریشه دار (ریس) مثبت
میشود

$$\frac{\mu(a+\nu) + \nu + a b}{n+b} \rightarrow a = -\mu$$

$$\nu = 0 \rightarrow \nu + b = 0 \rightarrow b = -\nu$$

$$f(n) \geq \frac{\varepsilon}{\mu} \rightarrow \begin{cases} n \geq a \rightarrow \nu n - 1 \rightarrow \nu n - 1 \geq n - 1 \rightarrow n \geq 0 \wedge \Delta \\ n < a \rightarrow \varepsilon n + \nu \rightarrow \varepsilon n + \nu \geq n - 1 \rightarrow \nu n \geq -\varepsilon + n \geq -\frac{\varepsilon}{\mu} \end{cases}$$

$$IV \text{ II} \rightarrow \frac{\varepsilon}{\mu} \leq n < a \cup n \geq a \rightarrow n \geq \frac{\varepsilon}{\mu}$$

$$\rightarrow \frac{\varepsilon}{\mu} \leq n < a \quad II$$

$$\frac{\mu(a n^2 + \nu n + \nu n + 1)}{(n+1)^2} = \frac{\mu(n+1)^2}{(n+1)^2} = \frac{\mu}{n+1} \quad \nu n + 1 \neq 0 \rightarrow n \neq -\frac{1}{\nu}$$

$$r \quad 9$$

$$\sqrt{1 - \varepsilon \frac{\nu n + a}{\mu}} \rightarrow \nu n + a \rightarrow n \geq \frac{a}{\nu} \rightarrow \varepsilon \frac{\nu n + a}{\mu} \leq 1 \rightarrow \nu n + a \leq \frac{\mu}{\varepsilon} \rightarrow n \leq \frac{\mu + a}{\nu} \quad Df = \left(\frac{a}{\nu}, \frac{\mu + a}{\nu} \right]$$

$$\frac{\mu + a}{\nu} - \frac{a}{\nu} = \frac{\mu}{\nu} = \Delta$$

$$r \quad 10$$