

کلاس : یازدهم (فترت)

$$\text{Sol)} f(n) = \sqrt{\frac{n-1}{n} - \frac{n}{n-1}} \gg 0 \quad \frac{n-1}{n} - \frac{n}{n-1} \gg 0 \rightarrow \frac{(n-1)^2 - n^2}{n(n-1)} \gg 0 \rightarrow \frac{n^2 - 2n + 1 - n^2}{n(n-1)} \gg 0$$

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$$D_f = R - \left\{ -5, \frac{5}{2}, -1, 0, 1 \right\} \text{ جواب}$$

$$b) f(n) = \frac{1}{n+1} - \frac{1}{n} = \frac{1}{n(n+1)} \neq 0$$

$$\text{ii) } f(n) = \sqrt{\left(\frac{1}{n}\right)^n - 1} (n - \varepsilon^n) \gg 0 \rightarrow \left(\frac{1}{n}\right)^n - 1 (n - \varepsilon^n) \gg 0$$

$D_f = (-\infty, -1] \cup [\frac{5}{7}, +\infty)$ جواب $\rightarrow -2$ $\rightarrow \frac{5}{7}$

$\sqrt{x-1} + \sqrt{y+1} = 5$
 $\sqrt{x-1} \leq 5 \Rightarrow x-1 \leq 25 \Rightarrow x \leq 26$
 $\sqrt{y+1} \leq 5 \Rightarrow y+1 \leq 25 \Rightarrow y \leq 24$
 $P_f = [1, 26] \times [1, 25]$

$$f(x) = \frac{\log_x (x^r - x - r)}{\sqrt{x^r - 1} + 1} \neq 0$$

هیهودوت فخرج مندرنی سوار
وهمداره بیقرار است

$$x^r - n - r > 0 \rightarrow (n-r)(n+1) > 0$$

$$x^{n-1} \gamma_{10} \rightarrow \underbrace{(x-1)}_{\leftarrow +1} \underbrace{(x+1)}_{\leftarrow -1} \gamma_{10}$$

$$\begin{array}{c} -1 \quad 1 \\ \hline + \quad - \quad + \end{array}$$

$\int_D f = (-\infty, -1) \cup (1, +\infty)$

$f(x) = \sqrt{x^2 + 9x - 18} \gg$ $D_f = [-18, 6]$ $\xrightarrow{x=5} 3 - 45 - 18 = 0 \rightarrow 2a = -1 \rightarrow a = -\frac{1}{2}$ $\rightarrow -x^2 - \frac{1}{2}x + 18$

$\xrightarrow{x-r} r n' + n - 4 \ll \rightarrow x^r + x - 1 \ll \rightarrow (n+r) x_{n-r} \ll$
 $b = 1/d$ $a+b = -1/d + 1/d = 0$

$$D_f = \begin{bmatrix} -1 & 1 \\ 1 & 1 \end{bmatrix}$$

$$f(x) = \begin{cases} x^2 - 1 & x \geq 1 \\ x^2 + 1 & x < 1 \end{cases} \quad g(x) = \sqrt{f(x) - x} \geq 0 \rightarrow \sqrt{x^2 - 1 - x} \geq 0 \rightarrow \sqrt{x^2 - x - 1} \geq 0$$

$$y_2 = r \rightarrow r > 1 \rightarrow \boxed{1, 1} \vee \sqrt{r^2 + r - n} > 0 \rightarrow \sqrt{n + r} > 0 \rightarrow n + r > 0 \rightarrow n > -r \rightarrow \left. \begin{matrix} \\ \end{matrix} \right\} [-1, +\infty) \text{ د}$$

$$(1, +\infty) \cup [-1, +\infty) = [-1, +\infty) \text{ جواب}$$

$$f(n) = n^r - n$$

$$f\left(\sin \frac{\pi}{4} + \cos 2\pi\right)$$

$$\underbrace{\sin \frac{\pi}{r}}_1 + \underbrace{\cos 2\pi}_1 = 1 + \frac{\sqrt{5}}{r}$$

$$f(n) = f(n-1)$$

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

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پایه نهم دبیرستان : الفبائی

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$$f(x) = \frac{x+1}{x-1}$$

$$f(f(x)) = x$$

$$f(1) = \frac{1+1}{1-1} \neq 0 \rightarrow f(f(1)) = 1$$

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

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

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بیت جزان مساوی می شود
+ برز اول است

$$a \in \mathbb{R} - \{1\}$$

جواب

$$f(x) = x^2 - 1$$

$$g(x) = \sqrt{x^2 - 1}$$

$$f(g(x)) = -x^2$$

$$\rightarrow f(x) = -x^2$$

$$-x = x^2 - 1 \rightarrow x^2 - 1 - x = 0 \rightarrow (x-1)^2 = 0 \rightarrow x = 1$$

$$g(x) = 2 \rightarrow \sqrt{x^2 - 1} = 2$$

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$$a^2 - 1 = 0 \rightarrow a = \pm 1$$

جواب

$$f(x+1) = x^2 - 1$$

$$f(-1) = f(f(1)) = ?$$

$$\rightarrow f(1) = 1 - 0 + 1 = 2$$

$$\rightarrow f(2) = 2$$

$$f(-x) = x^2 + 1$$

$$f(-1) = 1$$

$$f(-1) = f(1) = 1 + 1 = 2$$

جواب

$$f(t \cos x + 1 \cos x) = t \tan x$$

$$f(1/2) = ?$$

$$x \cos x + 1 \cos x = 1/2 \rightarrow x \cos x + \cos x = 1/2$$

$$\rightarrow x \cos x = \frac{1}{2} - \cos x$$

$$\tan x = \frac{1}{2}$$

$$\tan x = \frac{1}{2}$$

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$$\tan x = \frac{1}{2}$$

$$t + 1 = 0 \rightarrow t = -1$$

$$\rightarrow t = -1$$

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$$t + 1 = 0 \rightarrow t = -1$$

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