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تغییر شماره ۲

$$\frac{n+1}{3} \geq 0 \Rightarrow n \geq -1$$

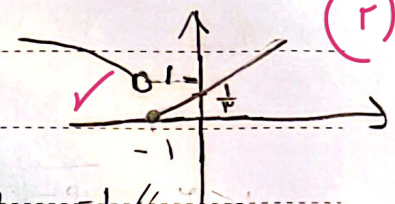
روز دهم اخترا

سایه سید مکی

$$n = \begin{cases} y-1 & y \geq 0 \\ -y^2 & y > 1 \end{cases}$$

$$n = 3y - 1 \quad y > 0$$

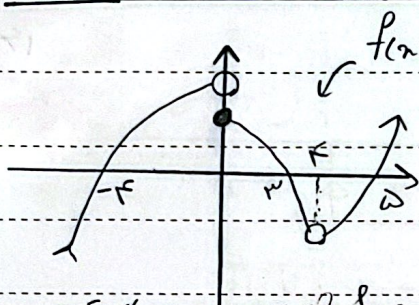
$$\Rightarrow y = \frac{n+1}{3}$$



$$\Rightarrow n = -y^2 \Rightarrow y^2 = -n \Rightarrow y = \pm \sqrt{-n}$$

تابع است که متوجه به شما می شود $y = +\sqrt{-n}$ و $y = -\sqrt{-n}$

$$\Rightarrow 1 < -n \Rightarrow (-1 > n)$$



$$g(n) = \frac{\sqrt{n f(n-2)}}{f(n)}$$

$$Dg = (-\infty, -2] \cup [0, 2] \cup [2, \infty)$$

	-4	-2	0	2	4	6
n	-	-	0	+	+	+
f(n-2)	-	-	0	+	+	+
f(n)	-	+	+	+	+	+
p	-	+	0	+	+	+

$f(n-2)$ طول های تابع اصلی به علاوه ۲ می شوند $\Rightarrow$ می بینیم عبارت می شود $(-4, -2, 0, 2, 4, 6)$

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

$$n^2 - 2n \neq 0 \quad n(n-2) \neq 0 \Rightarrow n \neq 0, \pm 2$$

$$Df = \mathbb{R} - \{-2, 0, 2\}$$

$$\sqrt{f(n)} \Rightarrow f(n) \geq 0 \Rightarrow \frac{2n^2 - 2n + 1}{n^2 - 2n} \geq 0$$

$$Df = (-2, 0) \cup (0, 2) \cup (2, \infty)$$

$$الف) y = \sqrt{\frac{n-2}{n^2 - 2n^2 - 1}} \Rightarrow a \geq 0$$

$$n^2 - 2n^2 - 1 = t^2 - 2t - 1 = (t-2)(t+2)$$

$$n^2 = t^2 \Rightarrow t = n$$

$$t = 2 \quad t = -2 \Rightarrow n = \pm 2$$

$$Df = (-2, +\infty) - \{2\}$$

$$ب) y = \frac{2n^2 + 1}{2 - 2[-n]}$$

$$\mathbb{R} - (-3, -2) \Rightarrow Df = \mathbb{R} - (-3, -2)$$

$$2 - 2[-n] = 0 \Rightarrow 2 = 2[-n] \Rightarrow 1 = [-n] \Rightarrow 1 < -n < 2$$

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$$\Rightarrow -3 < n < -2$$

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$$\text{الف) } f(x) = \frac{\sqrt{x(x^2-1)}}{\sqrt{|x|+x}}$$

$$x(x^2-1) \geq 0 \Rightarrow \begin{array}{c} -1 \quad 0 \quad +1 \\ - \quad + \quad - \quad + \\ \hline - \quad + \quad - \quad + \end{array} \quad \left. \begin{array}{l} x(x^2-1) \geq 0 \\ |x|+x > 0 \Rightarrow x \in (0, +\infty) \end{array} \right\} x$$

$$\Rightarrow D_f = [1, +\infty) \checkmark$$

$$\text{ب) } f(x) = \frac{\sqrt{|x-r|-x^2}}{|x|-1} \quad (r)$$

$$|x-r|-x^2 \geq 0 \Rightarrow \begin{cases} x \geq r \Rightarrow -x^2+x-r \\ x < r \Rightarrow -x^2-x+r \end{cases}$$

$$= \begin{array}{c} -r \quad 1 \\ - \quad + \\ \hline - \quad + \end{array} = \begin{array}{c} - \quad + \\ \hline - \quad + \end{array} = -(x+r)(x-1)$$

$$|x|-1 \neq 0 \Rightarrow x \neq \pm 1$$

$$D_f = [-r, 1) \cup \{-1\} \checkmark$$

$$\text{الف) } y = \sqrt{(x-r)[x-r]}$$

$$\begin{array}{c} r \quad r \\ + \quad 0 \quad 0 \quad + \end{array}$$

$$\Downarrow \\ D_f = \mathbb{R} \checkmark$$

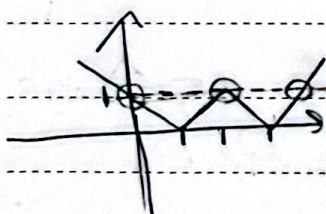
$$\text{ب) } y = \sqrt{|x-1|[x-r]} \quad (r)$$

$$\begin{array}{c} 1 \quad r \quad r \\ - \quad 0 \quad - \quad 0 \quad + \end{array}$$

$$D_f = [r, +\infty) \cup \{1\} \checkmark$$

$$y = \frac{1}{||x-r|-1|-k} \Rightarrow \begin{cases} ||x-r|-1|-k \neq 0 \\ ||x-r|-1| \neq k \end{cases} \quad (r)$$

نمودار $y = ||x-r|-1|$ را ببینید، در سه نقطه با $y=k$ برخورد دارد



$$0 < k < 1 \Rightarrow \text{نقطه 3}$$

$$k=1 \Rightarrow \text{نقطه 1} \Rightarrow k=1 \checkmark$$

$$k > 1 \Rightarrow \text{نقطه 2}$$

$$f(x) = \frac{x^2+3x+r}{\frac{x^2+3x+r}{x+1}}$$

$$x^2-4x+9=0 \Rightarrow (x-3)^2=0 \Rightarrow x=3 \quad (r)$$

$$x-1 \neq 0 \Rightarrow x \neq 1$$

$$x+1 \neq 0 \Rightarrow x \neq -1$$

$$x^2+3x+r \neq 0 \Rightarrow (x+1)(x+r) \neq 0 \Rightarrow x \neq -1, -r$$

$$\Rightarrow x=3 \checkmark$$

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(9)

(1,5)

$$y = \log_{n+1} \log_n \frac{1}{x}$$

$$n+1 \neq 1, n+1 > 0 \Rightarrow n > -1 \quad \left. \begin{array}{l} n > 0, n \neq 1 \end{array} \right\} \cap \Rightarrow Df = (0, +\infty) \setminus \{1\}$$

$$f(x^{n^2-1}) \Rightarrow Df = ?$$

(10)

$$Df(n) = [-\infty, \infty]$$

$$\Rightarrow Df = \left[-\frac{1}{\sqrt{n}}, \frac{1}{\sqrt{n}} \right]$$

(2)

$$f(x) \xrightarrow{\substack{n \text{ ها به علاوه 1} \\ n \text{ ها ضرب در } \frac{1}{n} \\ \text{ریشه شری ها}}} f(x^{n^2-1}) \Rightarrow [-\infty, \infty] \Rightarrow [-\varepsilon, \varepsilon]$$

$$\left[-\frac{1}{\sqrt{n}}, \frac{1}{\sqrt{n}} \right] \Leftarrow \left[-\frac{\varepsilon}{\sqrt{n}}, \frac{\varepsilon}{\sqrt{n}} \right]$$

$$1) n+1 > 0 \rightarrow n > -1, n+1 \neq 1 \rightarrow n \neq 0$$

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$$2) n > 0, n \neq 1$$

$$\xrightarrow{n} Df = (0, 1)$$

$$3) \log \frac{1}{n} > 0 \rightarrow 0 < n < 1$$

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