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سری ۲

۱۳۷۵ سوالات مناسبه جوده هست

بادقت پاسخ های نه نویسم + جوده مناسبه

1. $f(a) = \sqrt{(a-2)a^2+a+1}$ $a=2$ $9a-11+2a+b > 0 \rightarrow 12a+b-11 > 0$
 $\rightarrow b > 11-12a$
 $\rightarrow a-2 > 0 \rightarrow a > 2$ $\left| \begin{aligned} (a-2)a^2+a+1 &= (a-2)(a-2)^2 \rightarrow (a-2)(a^2-4a+4) \\ &\rightarrow (a-2)a^2-4(a-2)a+4(a-2) \rightarrow -4(a-2)a+4(a-2) \end{aligned} \right.$
 $\rightarrow b > 11-12a \rightarrow 11-12 \times 12$ $\left(b > -143 \right)$ **باید خط پایتیب باشد!**

2. $f(a) = \sqrt{a^2+2a+2}$ $a=0$ $2-m^2 > 0 \rightarrow m^2 < 2 \rightarrow \sqrt{2} > m > -\sqrt{2}$
 اقلیم $\rightarrow \sqrt{2} \left(\frac{+}{-} \sqrt{2} \right) = \left(\sqrt{2} \right)$ $\Delta < 0 \rightarrow 4-4(2-m^2) < 0 \rightarrow 4m^2 < 4$

10. $f(a) = \frac{\sqrt{4-a^2}}{[a]+[a]+1}$ $\Rightarrow \sqrt{4-a^2} > 0 \rightarrow 4-a^2 > 0 \rightarrow a^2 < 4 \rightarrow -2 < a < 2$
 $[a]+[a]+1 \neq 0 \Rightarrow [a]+[a]+1 \neq 0 \rightarrow [a]+[a] \neq -1$ سوال اعداد صحیح صفر $a \notin \mathbb{Z}$
 $D_f = [-2, 2] \rightarrow -2, -1, 0, 1, 2$ **دست**

15. $y = \sqrt{x^2+2x}$ $x^2+2x > 0 \rightarrow x^2(x+2) > 0$ $\frac{-2}{-1+2+1}$
 $D_f = [-2, +\infty)$ **رشته منفی** $x^2(x+2)$
 ب) $y = \sqrt{\frac{(x^2-1)(x^2-2x^2)}{x^2-1}}$ $\frac{(x-1)(x+1)(x^2-2x^2)}{(x-1)(x^2+x+1)}$ $\frac{-1}{+1} \frac{+}{-} \frac{+}{-} \frac{+}{+}$
 $D_f = (-\infty, 0) \cup (2, +\infty)$

25. $y = \sqrt{|x-1|-2}$ $|x-1|-2 > 0 \rightarrow |x-1| > 2 \rightarrow x-1 > 2 \rightarrow x > 3$
 $|x-1|-2 > 0 \rightarrow |x-1| > 2 \rightarrow x-1 < -2 \rightarrow x < -1$ **بیشتر منفی!**
 $D_f = (-\infty, -1) \cup (3, +\infty)$

30. $y = \sqrt{4-12a}$ $4-12a > 0 \rightarrow 12a < 4 \rightarrow 2a < 2 \rightarrow a < 1$
 $4-12a > 0 \rightarrow 12a < 4 \rightarrow 2a > -4 \rightarrow a > -2$
 $D_f = [-2, 1]$

صورت سوال را البته نه تست! $\sqrt{3-1n-1} - 1 \neq 0$

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$\sqrt{3-1n-1} - 1 \neq 0$

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الف) $y = \sqrt{1-n|n|}$ $\begin{cases} n < 0 \\ n > 0 \end{cases}$
 $n < 0 \rightarrow 1-n|n| \geq 0 \rightarrow 1-n(-n) \geq 0 \rightarrow 1+n^2 \geq 0 \rightarrow n^2 \geq -1 \rightarrow n \in \mathbb{R}$
 $n > 0 \rightarrow 1-n|n| \geq 0 \rightarrow 1-n(n) \geq 0 \rightarrow 1-n^2 \geq 0 \rightarrow n^2 \leq 1 \rightarrow -1 \leq n \leq 1$
 $\Rightarrow D_f = (-\infty, 1]$
 ب) $y = \frac{1}{\sqrt{3-1n-1}}$ $\rightarrow 3-1n-1 > 0 \rightarrow |n-1| < 2 \rightarrow n-1 < 2 \rightarrow n < 3$
 $n-1 > -2 \rightarrow n > -1$
 $\Rightarrow D_f = (-1, 3)$

الف) $y = \frac{\sin^2 x - 1}{\cos x}$ $\rightarrow \cos x \neq 0 \rightarrow D_f = \{k\pi + \frac{\pi}{2}\}$
 ب) $y = \frac{\cos x}{2\cos x - 1}$ $\rightarrow 2\cos x - 1 \neq 0 \rightarrow 2\cos x \neq 1 \rightarrow \cos x \neq \frac{1}{2}$
 $\Rightarrow D_f = \mathbb{R} \setminus \{2k\pi \pm \frac{\pi}{3}\}$

الف) $y = \frac{x+3}{|2x+1|-|x+3|}$ $\rightarrow |2x+1|-|x+3| \neq 0$
 $|2x+1| = |x+3| \rightarrow (2x+1)^2 = (x+3)^2$
 $\rightarrow 4x^2 + 4x + 1 = x^2 + 6x + 9 \rightarrow 3x^2 - 2x - 8 = 0$
 $(x+2)(x-4) = 0$
 $x = -2$ or $x = 4$
 $\Rightarrow D_f = \mathbb{R} \setminus \{-2, 4\}$
 ب) $y = \sqrt{|2x+1|-|x+3|}$ $\rightarrow |2x+1| \geq |x+3| \rightarrow (2x+1)^2 \geq (x+3)^2$
 $\rightarrow 4x^2 + 4x + 1 \geq x^2 + 6x + 9 \rightarrow 3x^2 - 2x - 8 \geq 0$
 $\Rightarrow D_f = (-\infty, -2] \cup [\frac{4}{3}, +\infty)$

الف) $f(x) = \sqrt{\log_{\frac{1}{10}}(x-1)}$ $\begin{cases} x > 1 \\ \log_{\frac{1}{10}}(x-1) \geq 0 \end{cases}$
 $x > 1 \rightarrow x-1 > 0$
 $\log_{\frac{1}{10}}(x-1) \geq 0 \rightarrow x-1 \leq 1 \rightarrow x \leq 2$
 $\Rightarrow D_f = [1, 2]$
 ب) $f(x) = \sqrt{\log_{\frac{1}{10}}(x-1)}$ $\begin{cases} x > 1 \\ \log_{\frac{1}{10}}(x-1) < 0 \end{cases}$
 $x > 1 \rightarrow x-1 > 0$
 $\log_{\frac{1}{10}}(x-1) < 0 \rightarrow x-1 > 1 \rightarrow x > 2$
 $\Rightarrow D_f = (2, +\infty)$

نا صاده عرض مرگودا! مصب سبب هفتگی نیست!

Arman

$$\text{الف) } y = \log(r \cos x + 1) \rightarrow r \cos x + 1 > 0 \rightarrow \cos x > -\frac{1}{r} \quad -10$$

$$D_f = (rKx - \frac{r\pi}{r}, rKx + \frac{r\pi}{r}) \checkmark$$

$$\text{ب) } y = \sqrt{\log \frac{x-1}{x+1}} \rightarrow \frac{x-1}{x+1} > 0 \rightarrow \frac{-1}{+ \infty - 1 +} \rightarrow (-\infty, -1) \cup (1, +\infty)$$

(1, \delta)

!!!!!! قَبْ

$$\log \frac{x-1}{x+1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1-x-1}{x+1} \geq 0 \rightarrow \frac{-2}{x+1} \geq 0$$

①

$$\text{① ②} = D_f = (-\infty, -1) \cup (1, +\infty)$$

$$\frac{-1}{+ \infty - 1 +} \quad \text{①}$$

Arman

(۱) چون دامنه تک بازه است پس عبارت نمی تواند یک سهم باشد و باید یک خط باشد!

$$a - 2 = 0 \rightarrow a = 2 \rightarrow f(n) = \sqrt{2n + b} \xrightarrow{Df = [3, +\infty)} 2(3) + b = 0 \rightarrow \boxed{b = -6}$$

(۲) چون دامنه تابع $\mathbb{R}$ است پس عبارت زیر را میال همواره نامتناهی است پس باید سهم (بارشیه ی فضای یا بدون ریشه) ^{حالت ۰} ^{حالت +}

مواضع هم (سهم $\min$ دار است چون ضریب n^2 یک است)

$$\Delta \leq 0 \rightarrow (2)^2 - 4(2 - n^2) \leq 0 \rightarrow 4 - 8 + 4n^2 \leq 0 \rightarrow 4n^2 \leq 4 \rightarrow n^2 \leq 1$$

$$-1 \leq n \leq 1 \rightarrow \min(n) = -1 \rightarrow \max(n) - \min(n) = 1 - (-1) = \boxed{2}$$

$\hookrightarrow \max(n) = 1$

ج-۴ $\frac{(n^2-1)(n^3-n^2)}{(n^3-1)} \geq 0 \rightarrow \frac{(n-1)(n+1)(n^2)(n-1)}{(n-1)(n^2+n+1)} \geq 0$

$\Delta < 0$ ریشه ندارد

-1	*	0	*	1	3
+	0	-	0	-	0
+	0	-	0	-	0

$Df = (-\infty, -1] \cup \{0\} \cup [3, +\infty)$

الف-۵ $|n-2| - 3 \geq 0 \rightarrow |n-2| \geq 3 \rightarrow n-2 \geq 3 \rightarrow n \geq 5$
 $\hookrightarrow n-2 \leq -3 \rightarrow n \leq -1$

$\rightarrow Df = (-\infty, -1] \cup [5, +\infty)$

ج-۶ $3 - |n-5| \geq 0 \rightarrow |n-5| \leq 3 \rightarrow -3 \leq n-5 \leq 3 \rightarrow 2 \leq n \leq 8$

$\sqrt{3 - |n-5|} - 1 \neq 0 \rightarrow \sqrt{3 - |n-5|} \neq 1 \rightarrow 3 - |n-5| \neq 2 \rightarrow |n-5| \neq 1 \rightarrow n \neq 4, 6$

$Df = [2, 8] - \{4, 6\} = [2, 4) \cup (4, 6) \cup (6, 8]$

$$9) \log_{\frac{1}{\Delta}} \log_{\Delta}^{r_{n-1}} \rightarrow r_{n-1} > 0 \rightarrow n > \frac{1}{\Delta}$$

$$\log_{\Delta}^{r_{n-1}} > 0 \rightarrow r_{n-1} > \Delta \rightarrow r_{n-1} > 1 \rightarrow n > 1$$

$$\log_{\frac{1}{\Delta}} \log_{\Delta}^{r_{n-1}} \geq 0 \xrightarrow[\text{منسوبة!}]{\text{من بابي هرا}} \log_{\Delta}^{r_{n-1}} \leq \left(\frac{1}{\Delta}\right) \rightarrow \log_{\Delta}^{r_{n-1}} \leq 1 \rightarrow r_{n-1} \leq \Delta \rightarrow r_n \leq 4 \rightarrow n \leq 4$$

$$\hookrightarrow D_f = (1, 4]$$

$$10 - \text{ب}) \frac{n-1}{n+1} > 0 \rightarrow n > 1 \leq n < -1$$

$$\log_{\frac{n+1}{n-1}} > 0 \rightarrow \frac{n-1}{n+1} \geq (1) \rightarrow \frac{n-1}{n+1} \geq 1 \rightarrow \frac{n-1}{n+1} - 1 \geq 0 \rightarrow \frac{n-1-n-1}{n+1} \geq 0 \rightarrow \frac{-2}{n+1} \geq 0$$

$$n+1 < 0 \rightarrow n < -1 \rightarrow D_f = (-\infty, -1)$$