

امیر کی مراد

A

۱۵) یانف های د فوتم بافت نوار ملامرود

$$D_f: \sqrt{(a-r)n^r + an + b} = [r, +\infty) \Rightarrow (n-r)^r \geq 0 \Rightarrow n^r + 9n + 9 = (a-r)n^r + an + b$$

$$r_m + b \geq \dots \Rightarrow r_m - q \geq 0 \quad \overset{!}{\hookrightarrow} \boxed{m \geq \mu} \quad a - r = 0 \Rightarrow \textcircled{5r}$$

$$b = -4$$

$$\underbrace{a^2 + b^2 + c^2}_{\Delta < 0} \Rightarrow \Delta < 0$$

(۲) $\text{برج اینجه دانه } R \text{ باشد نباید } \leq \Delta \leq 5$

$\Rightarrow \Delta = b^2 - 4ac \Rightarrow 4 - 4(1)(1 + r - m^2) \Rightarrow 4 - (4 + 4r - 4m^2) = 4 - 4 - 4r + 4m^2 \Rightarrow -4r + 4m^2 \Rightarrow$
 $4m^2 - 4r < 0 \Rightarrow 4m^2 < 4r \Rightarrow m^2 < r \Rightarrow m < \sqrt{r}$

$$f(m) = \frac{\sqrt{\epsilon - m^2}}{[m] + [-m] + 1} \Rightarrow \sqrt{\epsilon - m^2} \Rightarrow \epsilon - m^2 \geq 0 \Rightarrow m^2 \leq \epsilon \Rightarrow -\sqrt{\epsilon} \leq m \leq \sqrt{\epsilon} \Rightarrow [-\sqrt{\epsilon}, \sqrt{\epsilon}] \text{ (I)}$$

$\{n\} + [-n] + 1 \neq 0 \Rightarrow [n] + [-n] \neq -1 \Rightarrow \textcircled{Z} \textcircled{II}$

صد سے سوال! استیہ ندرستی!

صدق سوال! اثبت هنو کیسے!

(۴) $\sqrt{n^3 + n^2} \Rightarrow n^3 + n^2 > 0 \Rightarrow n^2(n+1) > 0$

$\frac{-n \pm \sqrt{n^2 + 4n}}{2} = \frac{-n \pm \sqrt{n^2 + 4n}}{2}$

$\{n, +\infty\} \setminus \{0\}$

$[n, +\infty)$

$x^4 - 1 \geq 0$
 $(x^2 - 1)(x^2 + 1) \geq 0$
 $(x - 1)(x + 1)(x^2 + 1) \geq 0$
 $x = 1, -1$
 $x^2 + 1 > 0$
 $x \in (-\infty, -1] \cup [1, +\infty)$

$$\text{ii) } y \sqrt{|n-r|-r} \Rightarrow |n-r|-r \geq 0 \Rightarrow |n-r| \geq r \Rightarrow \begin{matrix} n-r \geq r \\ n-r \leq -r \end{matrix} \Rightarrow \begin{matrix} n \geq w \\ n \leq -1 \end{matrix} \Rightarrow \text{Domain: } (-\infty, -1] \cup [w, +\infty)$$

قسمت ب؟

Q

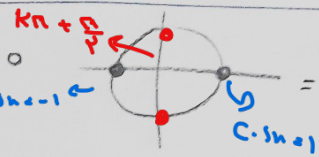
1) $y, \sqrt{1-m|m|} \Rightarrow 1-m|m| \geq 0 \Rightarrow m|m| \leq 1 \quad \checkmark [-\infty, 1]$

$\Rightarrow 3-m-0 \geq 0$

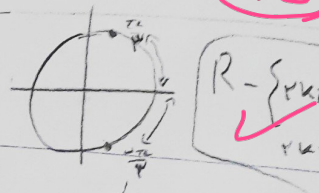
صورت سوال را انتخاب نکنیم!

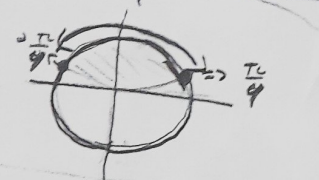
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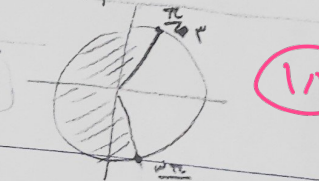
2) $\frac{1}{\sqrt{3-|m-1|}} > \sqrt{3-|m-1|} > 0 \Rightarrow \sqrt{3-|m-1|} > 1 \Rightarrow 3-|m-1| > 1$
 $\Rightarrow |m-1| < 2 \quad -2(m-1) < 2 \Rightarrow 3(m-1) < 2 \Rightarrow (m, 1)$

1) $y, \frac{\sin^2 m - 1}{\cos} \Rightarrow \cos \neq 0$


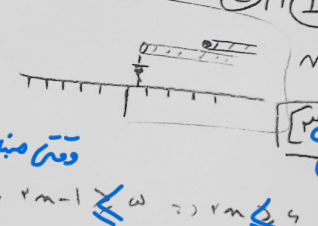
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2) $y, \frac{\cos m}{2\cos m - 1} \Rightarrow 2\cos m - 1 \neq 0 \Rightarrow 2\cos m \neq 1 \Rightarrow \cos m \neq \frac{1}{2}$


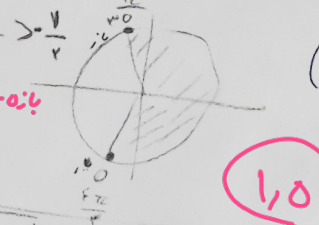
1) $y, \sqrt{2\sin m - 1} \Rightarrow 2\sin m - 1 \geq 0 \Rightarrow 2\sin m \geq 1 \Rightarrow \sin m \geq \frac{1}{2}$
 $\Rightarrow [k\pi + \frac{\pi}{6}, k\pi + \frac{5\pi}{6}] \Rightarrow R = \{k\pi + \frac{\pi}{6}, k\pi + \frac{5\pi}{6}\}$


2) $y, \sqrt{1-2\cos m} \Rightarrow 1-2\cos m \geq 0 \Rightarrow 2\cos m \leq 1 \Rightarrow \cos m \leq \frac{1}{2}$
 $P = [\frac{\pi}{3}, \frac{5\pi}{3}]$ **مجاوب 2m ننویسیم!**


1,5

$f(m) = \sqrt{\log_2(m-1)}$ $2m-1 > 0 \wedge 2m > 1 \Rightarrow m > \frac{1}{2}$ **II**
وقت منبسطی و دالت مرتب نامداره بعین مرتب! **(مجبوری نیستی!)**
 $L_2(2m-1) \geq 0 \Rightarrow L_2(2m-1) \geq 1 \Rightarrow 2m-1 \geq 2 \Rightarrow 2m \geq 3 \Rightarrow m \geq \frac{3}{2}$ **III**
وقت منبسطی و دالت مرتب نامداره بعین مرتب! **(مجبوری نیستی!)**
بانه بر حسب دسترس! $D_f = (m\pi - \frac{\pi}{2}, m\pi + \frac{\pi}{2})$


1,5

1) $\log_2(2\cos m + 1) \Rightarrow 2\cos m + 1 > 0 \Rightarrow 2\cos m > -1 \Rightarrow \cos m > -\frac{1}{2}$
 $D_f = (m\pi - \frac{2\pi}{3}, m\pi + \frac{2\pi}{3})$
 $\frac{m-1}{m+1} > 0 \Rightarrow \frac{-1}{+b-b+} > 0$ **I**
 $\frac{m-1}{m+1} > 1 \Rightarrow \frac{m-1}{m+1} - \frac{m+1}{m+1} > 0 \Rightarrow \frac{-2}{m+1} > 0 \Rightarrow m < -1$ **II**
I) $\cap$ II) $\Rightarrow [-1, +\infty)$


1,5

thank you محزون بابت زحمت مرسی

(۲) چون دامنه تابع f است پس عبارت زیر را سیال همواره نامتناهی است پس باید سهمی (بارشهای مثبت یا بدون ریشه)

مواجهه کنیم (سهمی $\min$ دار است چون ضریب x^2 مثبت است)

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

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

$$\hookrightarrow \max(n) = 1$$

۴- الف) $n^3 + 3n^2 \geq 0 \rightarrow n^2(n+3) \geq 0 \rightarrow \frac{-3}{-} \frac{0}{+} \frac{0}{+} \rightarrow D_f = [-3, +\infty)$

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

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

Δ<0 ریشه ندارد

۵- ب) $4 - |4-n| \geq 0 \rightarrow |4-n| \leq 4 \rightarrow |n-4| \leq 4 \rightarrow -4 \leq n-4 \leq 4 \rightarrow -2 \leq n \leq 8$

چون $|a|=|a|$

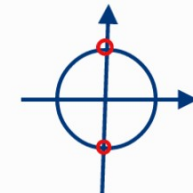
$$D_f = [-2, 8]$$

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

$$\sqrt{3 - |n-5|} - 1 \neq 0 \rightarrow \sqrt{3 - |n-5|} \neq 1 \rightarrow 3 - |n-5| \neq 1 \rightarrow |n-5| \neq 2 \rightarrow n \neq 3, 7$$

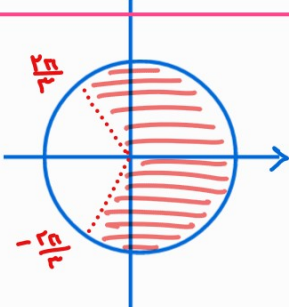
$$D_f = [2, 8] - \{3, 7\} = [2, 3) \cup (3, 7) \cup (7, 8]$$

۷- الف) $y = \frac{\sin^2 n - 1}{\cos n} \rightarrow \cos n \neq 0 \rightarrow$



$$\rightarrow D_f = \mathbb{R} - \left\{kn + \frac{\pi}{2}\right\}$$

۸- الف) $2\cos n + 1 > 0 \rightarrow \cos n > -\frac{1}{2}$



$$\rightarrow D_f = (2kn - \frac{\pi}{3}, 2kn + \frac{\pi}{3})$$

$$9) \log_{\frac{1}{5}} \log_5^{x-1} \rightarrow x-1 > 0 \rightarrow x > 1$$

$$\log_5^{x-1} > 0 \rightarrow x-1 > 0 \rightarrow x-1 > 1 \rightarrow x > 2$$

$$\log_{\frac{1}{5}} \log_5^{x-1} \geq 0 \xrightarrow[\text{من أجل!}]{\text{من أجل!}} \log_5^{x-1} \leq \frac{1}{5} \rightarrow \log_5^{x-1} \leq 1 \rightarrow x-1 \leq 5 \rightarrow x \leq 6 \rightarrow x \leq 3$$

$$\therefore D_f = (1, 3]$$

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

$$\log_{\frac{1}{5}} \frac{x+1}{x-1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} - 1 \geq 0 \rightarrow \frac{x-1-x-1}{x+1} \geq 0 \rightarrow \frac{-2}{x+1} \geq 0$$

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