

① $\sqrt{x-2} \rightarrow (a-2)x^2 + ax + b$

$a-2=0 \rightarrow a=2$
 $x(1+b)=0 \rightarrow x=2 \rightarrow 2(2)+b=0 \rightarrow b=-4$

② $x^2 + mx + 1 + 1 - m^2$
 $(x+1)^2 + 1 - m^2 > 0$
 $\rightarrow 1 - m^2 > 0 \rightarrow 1 > m^2 \rightarrow -1 < m < 1$

③ الف) $x^3 + 3x^2 > 0 \rightarrow x^2(x+3) > 0$
 $x+3 > 0 \rightarrow x > -3$
 $x = \pm 1$

ب) $(x^2-1)(x^3-3x^2) > 0 \rightarrow x^2(x-1)(x-3) = 0$
 $x=0, x=1, x=3$

-	+	-	+	-	+
0	1	3			

د) $(-\infty, -1] \cup [3, +\infty) \cup \{0\}$
 نه ازای $x=0$ عبارت صفر شود
 پس در دامنه هست

④ $x-x^2 > 0 \rightarrow x > x^2 \rightarrow -2 < x < 2$

$[x] + [-x] + 1 \neq 0 \rightarrow [x] + [-x] \neq -1 \rightarrow [-2, 2]$
 $5 \leftarrow (-2, 1, 2, 3, 4, 5)$

الف) $|x-2| - 3 > 0 \rightarrow |x-2| > 3$

$\rightarrow x-2 < -3 \rightarrow x < -1$
 $x-2 > 3 \rightarrow x > 5$

$(-\infty, -1) \cup (5, +\infty)$

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ب) $4 - |x-1| > 0 \rightarrow 4 > |x-1|$

$\rightarrow -4 < x-1 < 4$

$x \in [-2, 6] \leftarrow \{x > -2\} \cap \{x < 6\}$

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الف) $|1-x| > 0$

① $\rightarrow x > 0 \rightarrow 1-x^2 > 0 \rightarrow 1 > x^2 \rightarrow x < 1$

② $x < 0 \rightarrow 1+x^2 > 0 \rightarrow \text{مستحيل} \Rightarrow x < 0$

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$(-\infty, 0) \cup (0, 1)$

ب) $3 - |x-5| > 0 \rightarrow 3 > |x-5| \rightarrow -2 < x-5 < 8$

$x \in [3, 13] \leftarrow \{x > 3\} \cap \{x < 13\}$

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الف) $\cos x \neq 0$

$\rightarrow D = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$
 فرق ثابت $k\pi - \frac{\pi}{2}$ و $k\pi + \frac{\pi}{2}$
 دقتن منتهی مدت

ب) $\forall x \cos x \neq 1 \rightarrow \cos x \neq 1 \rightarrow x \neq 2k\pi$

MAHAN

$D = \mathbb{R} - \{2k\pi\}$

$$\textcircled{I} \rightarrow \sqrt{3-1n-01} - 1 \neq 0$$

(6) اراتب

$$\sqrt{3-1n-01} \neq 1$$

$$\rightarrow 3-1n-01 \neq 1$$

$$|m-\omega| \neq 1 \rightarrow n-\omega \neq \pm 1 \rightarrow n \neq 3, 2$$

$$D = \bigcap_{I \in \mathcal{I}} I \rightarrow [2, 3) \cup (3, 4) \cup (4, 5) \\ \stackrel{L}{=} D = [2, 5] - \{3, 4\}$$

الف) $|2n+1| - |n+3| \neq 0$

$$D = R - \left\{ -\frac{5}{4}, 2 \right\} \textcircled{1}$$

$$\rightarrow (2n+1)^2 - (n+3)^2 \neq 0$$

$$4n^2 + 4n + 1 - n^2 - 6n - 9 \neq 0 \rightarrow 3n^2 - 2n - 8 \neq 0$$

$$(3n+4)(n-2) \neq 0 \rightarrow n \neq -\frac{4}{3}, 2$$

ب) $|2n+1| - |n+3| > 0 \rightarrow (2n+1)^2 - (n+3)^2 > 0$

$$4n^2 + 4n + 1 - n^2 - 6n - 9 > 0 \rightarrow (3n+4)(n-2) > 0$$

$$\begin{array}{c} -\frac{4}{3} \quad 2 \\ + \quad | \quad - \quad | \quad + \\ \hline \end{array} \rightarrow (-\infty, -\frac{4}{3}) \cup (2, \infty) \textcircled{2}$$

$$\log_{\omega}^{(2n-1)} > 0 \rightarrow 2n-1 > 0 \rightarrow 2n > 1 \rightarrow n > \frac{1}{2} \textcircled{9}$$

$$\log_{\omega}^{(2n-1)} > 0 \rightarrow \log_{\omega}^{(2n-1)} > 0 \rightarrow 2n-1 > 0 \rightarrow n > \frac{1}{2} \textcircled{10}$$

$$D = [2, +\infty)$$

وقتی متناهی است و با بدست نامعادله عوض می‌دهد!

$$\log_{\omega}^{2n-1} > 0 \rightarrow \log_{\omega}^{2n-1} > 0 \rightarrow \log_{\omega}^{2n-1} > 0 \rightarrow \log_{\omega}^{2n-1} > 0$$

Date:

Subject: ریاضیات پایه

الف) $\log (r \cos n+1) \rightarrow r \cos n+1$



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جواب: از اول بازه کوی-تر است! $r \cos n > -1 \rightarrow \cos n > -1/r$

$D \rightarrow R - (r \cos n + \frac{r^2}{r}, r \cos n + \frac{r^2}{r})$

(1, 5)

ب) $\log \frac{n-1}{n+1} > 0 \rightarrow \frac{n-1}{n+1} > 1$

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$\rightarrow \frac{n-1}{n+1} > -1$

$\rightarrow \frac{-r}{n+1} > 0 \rightarrow n+1 < 0 \rightarrow n < -1$

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$$4- \text{ب}) \frac{(n^2-1)(n^2-n^2)}{(n^2-1)} \geq 0 \rightarrow \frac{(n-1)(n+1)(n^2)(n-1)}{(n-1)(n^2+n+1)} \geq 0$$

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

$$\begin{array}{ccccccc} & -1 & 0 & 1 & 3 & & \\ & * & * & * & & & \\ \hline & + & - & - & - & + & \\ & 0 & 0 & 0 & 0 & 0 & \end{array}$$

$$\Delta < 0$$

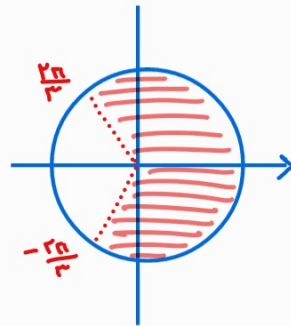
$$9) \log_a \log_a^{n-1} \rightarrow n-1 > 0 \rightarrow n > 1$$

$$\log_a^{n-1} > 0 \rightarrow n-1 > 0 \rightarrow n-1 > 1 \rightarrow n > 2$$

$$\log_a \log_a^{n-1} \geq 0 \xrightarrow{\text{من بابی هـ و ا حجت بدیهه! مستند!}} \log_a^{n-1} \leq 4 \rightarrow \log_a^{n-1} \leq 1 \rightarrow n-1 \leq 4 \rightarrow n \leq 5$$

$$\hookrightarrow D_f = (1, 5]$$

$$10- \text{الف}) 2 \cos n + 1 > 0 \rightarrow \cos n > -\frac{1}{2}$$



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