

۱۸، ۵ چترده نجیبی دامنه کتاب مصلی و برائی! بادقت معالنه کن!

ملیٰ اور ری - پارٹم A

$$\Rightarrow y = \frac{x+1}{(x+1)(x+1)(x+1)} \quad \Rightarrow D_F = R - \left\{ -1 \cancel{1^0} / \frac{1}{1} \right\}$$

الف) $x^3 - 2x^2 + 2x - 1 \mid x-1$ $\left| \begin{array}{l} x-1 \\ x^3 - x^2 + 1 \\ -x^2 + 2x - 1 \\ -x^2 + x \\ -x + 1 \\ x-1 \end{array} \right.$ $\rightarrow (x-1)(x^2 - x + 1) \Rightarrow D_f = R - \{1\}$
 $\hookrightarrow \Delta < 0$
 این حقیقی ندارد

$$\rightarrow \sqrt{\frac{x+r}{x^r - r x^{r-1} + r - 1}} = \frac{-r}{+} \mid \frac{1}{-} \mid \rightarrow D_f = (-\infty, -r] \cup (1, +\infty)$$

→ $\Delta < 0 \Rightarrow$ متواره +

$$x^2 - \omega|x-1| - \gamma x + \delta = 0 \Rightarrow \begin{cases} 1) \text{ if } x \geq 1 \Rightarrow x^2 - \omega x + \delta - \gamma x + \delta = 0 \Rightarrow x^2 - \omega x + 1 = 0 \Rightarrow (x-\gamma)(x-\omega) = 0 \\ 2) \text{ if } x \leq 1 \Rightarrow x^2 - \omega + \omega x - \gamma x + \delta = 0 \Rightarrow x^2 + \gamma x = 0 \Rightarrow x(x+\gamma) = 0 \end{cases}$$

ج) $1 - 2 \cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2} \rightarrow \bigcirc \Rightarrow D_f = \left[2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3} \right]$

الف) $-1 \leq x^2 + 3x + 1 \leq 1 \rightarrow \textcircled{1} x^2 + 3x + 1 \leq 1 \rightarrow x^2 + 3x \leq 0$

$\textcircled{2} \rightarrow x^2 + 3x + 1 \geq -1 \rightarrow x^2 + 3x + 2 \geq 0 \rightarrow (x+1)(x+2) \geq 0$

$\Rightarrow \textcircled{1} \cap \textcircled{2} \Rightarrow [-2, -1] \cup [-1, 0]$

ج) $\textcircled{1} \quad 5 - 2x \geq 0 \rightarrow x \leq \frac{5}{2}$

$\textcircled{2} \quad -1 \leq \sqrt{5 - 2x} \leq 1 \rightarrow 5 - 2x \leq 1 \rightarrow x \geq 2$

$\Rightarrow D_f = \left[2, \frac{5}{2} \right]$

الف) I) $1 - \log_x x > 0 \rightarrow \log_x x < 1 \rightarrow x < 3$
II) $x > 0$

$\Rightarrow D_f = (0, 3)$

ج) I) $1 - \log_{\frac{x}{2}} x > 0 \rightarrow \log_{\frac{x}{2}} x < 1 \rightarrow x > \frac{1}{2} \Rightarrow \left(\frac{1}{2}, +\infty \right)$
II) $x > 0$

الف) $2^{x^2 - x} - 1 \geq 0 \rightarrow 2^{x^2 - x} \geq 1 \rightarrow x^2 - x \geq 0$

$x^2 - x \geq 0 \rightarrow (x-1)(x-0) \geq 0 \rightarrow D_f = [0, 1]$

ج) $\frac{3x+5}{2x+4} \in W' \rightarrow -\frac{4W'-5}{2W'-3} = \frac{5-4W'}{2W'-3}$

$D_f = \left\{ x \mid x = \frac{5-4k}{2k-3}, k \in W' \right\}$

$\left[x - \frac{1}{2} \right] + \left[\frac{1}{2} - x \right] \xrightarrow{f(x)} [x] - [-x] \xrightarrow{f(x)} D_f = \mathbb{Z}$

Scanned with

CamScanner

$$4-ب) [n]^2 - 2[n] - 3 = 0 \xrightarrow{[n]=t} t^2 - 2t - 3 = 0 \rightarrow (t-3)(t+1) = 0$$

$$t=3 \rightarrow [n]=3 \rightarrow n \in [3, 4)$$

$$t=-1 \rightarrow [n]=-1 \rightarrow n \in [-1, 0)$$

$$\rightarrow \mathbb{D}_Z = (-\infty, -1) \cup [3, 4) \cup [4, +\infty)$$

$$\cup \mathbb{R} - \left\{ \bigcup_{t=3}^4 [3, 4) \cup [4, 5) \right\}$$

$$5-الف) [n - \frac{1}{4}] + [n + \frac{2}{3}] \geq 0 \xrightarrow{+1} [n - \frac{1}{4}] + 1 + [n + \frac{2}{3}] \geq 1$$

$$[n + \frac{2}{3}] + [n + \frac{2}{3}] \geq 1 \rightarrow [n + \frac{2}{3}] \geq \frac{1}{2} \xrightarrow{\text{اولین عدد صحیح بزرگتر از } \frac{1}{2} \text{ برابر یک است!}} n + \frac{2}{3} \geq 1$$

$$n \geq \frac{1}{6} \rightarrow \mathbb{D}_Z = [\frac{1}{6}, +\infty)$$

$$5-ب) [n - \frac{1}{4}] + [-n + \frac{1}{4}] \geq 0$$

مردانیم:

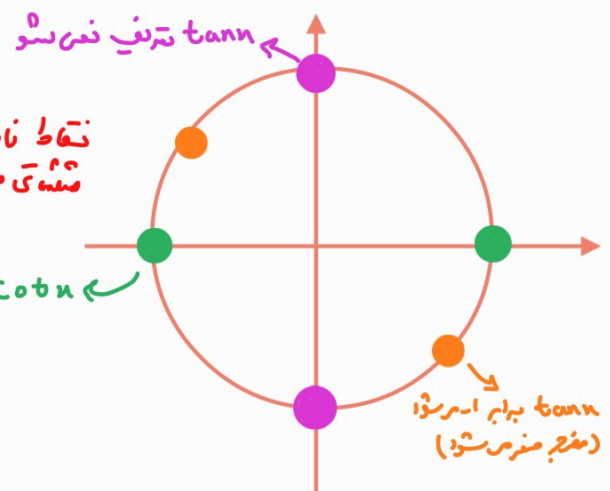
$$[n] + [-n] \begin{cases} n \in \mathbb{Z} & 0 \checkmark \\ n \notin \mathbb{Z} & -1 \times \end{cases}$$

$$\rightarrow [n - \frac{1}{4}] \in \mathbb{Z} \rightarrow n \in \mathbb{Z} + \frac{1}{4}$$

$$\mathbb{D}_Z = \{n \mid n = k + \frac{1}{4}, k \in \mathbb{Z}\}$$

$$9-الف) y = \frac{\cot x + 1}{\tan x + 1}$$

نقاط نامطلوب را در دایره
مختصات مشخص می‌کنیم.



$$x \neq k\pi + \frac{\pi}{2}$$

$$x \neq k\pi + \frac{\pi}{2} \cup x \neq k\pi$$

$$\hookrightarrow x \neq \frac{k\pi}{2}$$

$$\rightarrow \mathbb{D}_Z = \mathbb{R} - \left\{ \frac{k\pi}{2}, k\pi + \frac{\pi}{2} \right\}$$