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Sub: ...

$$\text{الف) } y = \frac{n+3}{n^3+n^2-n+3} = \frac{n+3}{(n-1)(n+1)(n+3)}$$

$$\Rightarrow D_f = \mathbb{R} - \left\{ -3, \frac{1}{3}, 1 \right\}$$

$$\begin{array}{l} \frac{n^3+n^2-n+3}{n^3+n^2} \left| \frac{n-1}{n^2+n-1} \right. \\ \hline \frac{n^3+n^2-n+3}{n^3+n^2} \\ \hline -n+3 \\ \hline \end{array}$$

$$\text{ب) } y = \frac{n+3}{n^3+9n^2+10n+3} = \frac{n+3}{(n+1)(n+3)(n+3)}$$

$$\Rightarrow D_f = \mathbb{R} - \left\{ -3, -1, -\frac{1}{3} \right\}$$

$$\begin{array}{l} \frac{n^3+9n^2+10n+3}{n^3+9n^2} \left| \frac{n+1}{n^2+10n+3} \right. \\ \hline \frac{n^3+9n^2+10n+3}{n^3+9n^2} \\ \hline -10n+3 \\ \hline \end{array}$$

$$\text{ج) } y = \frac{n+3}{n^3-n^2+n-1} = \frac{n+3}{(n-1)(n^2-n+1)} \Rightarrow D_f = \mathbb{R} - \{1\}$$

$$\text{د) } \sqrt{\frac{n+3}{n^3-n^2+n-1}} \Rightarrow \frac{n+3}{(n-1)(n^2-n+1)} \geq 0 \Rightarrow \frac{-3}{+} - \frac{1}{+} +$$

$$\Rightarrow D_f = (-\infty, -3] \cup (1, +\infty)$$

$$\begin{array}{l} \frac{n^3-n^2+n-1}{n^3-n^2} \left| \frac{n-1}{n^2-n+1} \right. \\ \hline \frac{n^3-n^2+n-1}{n^3-n^2} \\ \hline +n-1 \\ \hline \end{array}$$

$$y = \frac{2}{n^2-a|n-1|-2n+a} \Rightarrow n^2-a|n-1|-2n+a \neq 0$$

$$\begin{aligned} \xrightarrow{n \geq 1} \quad & |n-1| = n-1 \Rightarrow n^2-a(n-1)-2n+a = n^2-n+1 \\ & \Rightarrow (n-a)(n-1) \neq 0 \rightarrow a \neq 1 \end{aligned}$$

$$\begin{aligned} \xrightarrow{n \leq 0} \quad & |n-1| = 1-n \Rightarrow n^2-a(1-n)-2n+a = n^2+n \\ & \Rightarrow n(n+1) \neq 0 \rightarrow a \neq -1 \end{aligned}$$

$$\Rightarrow D_f = \mathbb{R} - \left\{ -3, 0, 1, a \right\}$$

$$\text{الف) } y = \sqrt{[x] - 2} \Rightarrow [x] - 2 \geq 0 \Rightarrow [x] \geq 2 \quad (4)$$

$$\Rightarrow D_f = (-\infty, -2]$$

$$\text{ب) } y = \frac{2x^2 + 4}{[x]^2 - 2[x] - 6} \Rightarrow [x]^2 - 2[x] - 6 \neq 0$$

$$\rightarrow ([x] - 3)([x] + 2)$$

$$[x] = 3 \rightarrow 3 \leq x < 4 \Rightarrow D_f = \mathbb{R} - [-1, 0) \cup [3, 4)$$

$$[x] = -1 \rightarrow -1 \leq x < 0$$

$$\text{وا) } y = \sqrt{[x - \frac{1}{2}] + [x + \frac{1}{2}]} \quad (5)$$

$$\Rightarrow 2[x - \frac{1}{2}] + 1 \geq 0$$

$$2[x - \frac{1}{2}] \geq -1 \Rightarrow [x - \frac{1}{2}] \geq -\frac{1}{2} \Rightarrow [x - \frac{1}{2}] \geq 0$$

$$\Rightarrow x - \frac{1}{2} \geq 0 \Rightarrow x \geq \frac{1}{2} \Rightarrow D_f = [\frac{1}{2}, +\infty)$$

$$\text{ب) } y = \sqrt{[x - \frac{1}{2}] + [\frac{1}{2} - x]} \rightarrow \sqrt{[x] + [-x]}$$

$$[x] + [-x] = 0$$

$$x - \frac{1}{2} \in \mathbb{Z}$$

$$\rightarrow x \in \mathbb{Z} + \frac{1}{2} \Rightarrow D_f = \{x \mid x = k + \frac{1}{2}, k \in \mathbb{Z}\}$$



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$\text{a) } y = \frac{\cos x + 1}{\tan x + 1}$
 $\left\{ \begin{array}{l} \sin x \neq 0 \\ \cos x \neq 0 \\ \tan x \neq -1 \end{array} \right.$
 $\mathbb{R} - \left\{ \frac{k\pi}{2}, k\pi - \frac{\pi}{2} \right\}$

$\text{b) } y = \sqrt{1 - 2\sin^2 x} \Rightarrow |\sin x| \leq 1 \Rightarrow \frac{1}{2} \geq \sin^2 x \Rightarrow$

$-\frac{1}{\sqrt{2}} \leq \sin x \leq \frac{1}{\sqrt{2}}$

$D_f = \left[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right]$

$\text{c) } y = \sqrt{1 - \cos x} \Rightarrow \sin x \geq \frac{1}{2}$

$D_f = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$

$\text{d) } y = \sqrt{1 - \cos x} \Rightarrow \frac{1}{2} \geq \cos x$

$D_f = \mathbb{R} - \left(2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3} \right)$

$\therefore D_f = \left[2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3} \right]$

$\text{e) } -1 \leq x^2 + x + 1 \leq 1$

$\text{a) } -1 \leq x^2 + x + 1 \Rightarrow 0 \leq (x+1)(x+2)$

$\text{b) } x^2 + x + 1 \leq 1 \Rightarrow x(x+1) \leq 0$

$D_f = [-1, 0] \cup [-2, -1]$

ب) $\cos y = \sqrt{\delta - 2m}$ $\Rightarrow 0 \leq \sqrt{\delta - 2m} \leq 1 \Rightarrow 0 \leq \delta - 2m \leq 1$

$\Rightarrow \delta - 2m \leq 1 \Rightarrow -2m \leq -\delta \Rightarrow m \geq \frac{\delta}{2} \Rightarrow \delta - 2m \geq 0 \Rightarrow m \leq \frac{\delta}{2}$

② $\delta - 2m > 0 \Rightarrow m < \frac{\delta}{2} \Rightarrow D_f = \left[\frac{\delta}{2}, \frac{\delta}{2} \right]$

الف) $y = \log_r (1 - \log_c^n)$

⑨

① $m > 0$ ② $1 - \log_c^n > 0 \Rightarrow \log_c^n < 1 \Rightarrow n < c$ 1.5
 $\Rightarrow D_f = (0, c) / n \in (0, c)$

ب) $y = \log_r (1 - \log_{\frac{1}{r}}^n)$ چون متناهی است و راست جهت نامعادله می شود

① $m > 0$ ② $1 - \log_{\frac{1}{r}}^n > 0 \Rightarrow \log_{\frac{1}{r}}^n < 1 \Rightarrow n < \frac{1}{r}$
 $\Rightarrow m \in (0, \frac{1}{r}) \quad \log_{\frac{1}{r}}^n < 1 \rightarrow n > \frac{1}{r} \rightarrow D_f = (\frac{1}{r}, +\infty)$

الف) $y = \sqrt{\frac{\epsilon m - n^2}{r} - 1}$

⑩

$\frac{\epsilon m - n^2}{r} - 1 \geq 0 \Rightarrow \frac{\epsilon m - n^2}{r} \geq 1 \Rightarrow \epsilon m - n^2 \geq r$

$\Rightarrow -n^2 + \epsilon m - r \geq 0 \Rightarrow n^2 - \epsilon m + r \leq 0 \Rightarrow (m-1)(r-c) \leq 0$

ب) $y = \left(\frac{\epsilon m + \delta}{r m + \epsilon} \right)!$ $\frac{1}{1-1} + \frac{1}{1-1} \quad D_f = [1, c]$

$\frac{\epsilon m + \delta}{r m + \epsilon} \in W \Rightarrow m = - \frac{\epsilon w - \delta}{r w - \epsilon} \Rightarrow m = \frac{\delta - \epsilon w}{r w - \epsilon}$

$\Rightarrow D_f = \left\{ n = \frac{\delta - \epsilon k}{r k - \epsilon}, k \in W \right\}$ 2

9- ب) $y = \log_r (1 - \log_{\frac{1}{r}}^n)$ $\rightarrow \log_{\frac{1}{r}}^n \rightarrow n$

$\rightarrow 1 - \log_{\frac{1}{r}}^n > 0 \rightarrow \log_{\frac{1}{r}}^n < 1$ متناهی (ب-9) $\rightarrow n > \frac{1}{r}$

$D_f = (\frac{1}{r}, +\infty)$