

$$2) \quad y = \frac{x + y}{x^2 + y^2 - 12x + y}$$

$$\begin{aligned} & \frac{r_{21}^v + r_{22}^v}{-r_{21}^v + r_{22}^v} \lambda_{22} + 1^v \Big/ \frac{r_{21}^v}{r_{21}^v + \delta_{22}} - 1^v \\ & \delta_{21}^v = \lambda_{22} + 1^v \\ & - \delta_{21}^v + \delta_{22} \quad (x-1)(r_{21}^v + \delta_{22}) \\ & \frac{r_{21}^v + 1^v}{r_{21}^v} \quad D_F = R - \end{aligned}$$

[illegible]

$$\therefore) \frac{x+y}{2x^2+9x^2+10x+y}$$

$$\frac{Vx^w + yx^r - (0x + 1^w)}{Vx^r - Vx} = \frac{Vx^w + 1x^r + 1^w}{Vx^r - Vx}$$

$$\frac{x+1}{x^2 + \sqrt{x} + 1} = \frac{(x+1)(x^2 + \sqrt{x} + 1)^{-1}}{x+1}$$

$$= (x^2 + \sqrt{x} + 1)^{-1} \cdot \frac{d}{dx}(x+1) - (x^2 + \sqrt{x} + 1)^{-2} \cdot \frac{d}{dx}(x^2 + \sqrt{x} + 1)$$

$$= (x^2 + \sqrt{x} + 1)^{-1} \cdot 1 - (x^2 + \sqrt{x} + 1)^{-2} \cdot (2x + \frac{1}{2}\sqrt{x})$$

$$= \frac{1}{x^2 + \sqrt{x} + 1} - \frac{2x + \frac{1}{2}\sqrt{x}}{(x^2 + \sqrt{x} + 1)^2}$$

$$31) \frac{x+11}{2x^2-2x^2+2x-1}$$

$$\frac{x^y - (x^y + x^y - 1) | x - 1 |}{-x^y + x^y} = \frac{-x^y + x^y - 1}{x^y - x^y} = \frac{-1}{0}$$

$$D_f \in R - \{-1, -r\} \quad (r)$$

$$7) y = \sqrt{\frac{x+1}{x^2 - 2x + 1}}$$

$$\frac{(n-1)(n^k - n + 1)}{\Delta \leq 0} \geq 0$$

$$V_f = (-\omega, 1] V(1, \infty)$$

$$y = \frac{r}{x^r - \delta|x-1| - rx + \delta}$$

$$\begin{array}{l} x^r - d \mid x-1 \Rightarrow -rx + d \neq 0 \\ x \nmid x^r - dx + d - rx + d = x^r - \sqrt{rx} + 1 \neq 0 \quad x \neq d \quad x \neq r \\ x \nmid x^r + dx - d - rx + d = x^r + \sqrt{rx} \neq 0 \quad x \neq 0 \quad x \neq -\sqrt{r} \end{array}$$

$$D_f, R = \{-1, 0, 1, \delta\}$$

$$a)) y = \sqrt{[-x] - 1}$$

$$\frac{[-x] - r \geq 0 \quad [-x] \geq r}{D_f = (-\infty, -r]}$$

$$\begin{aligned} -x &\geq y \\ x &\leq -y \end{aligned}$$

$$\therefore y = \frac{x^r + 4}{[x]^r - 1[n] - 1}$$

$$\begin{aligned} & (x)^2 - 2[x] - 1 \neq 0 \\ & (x-1)(x+1) \neq 0 \end{aligned}$$

$$\begin{array}{l} [x] \neq 1^c \\ [x] \neq -1 \end{array} \quad \begin{array}{l} x \neq (1^c, 1^c) \\ x \neq (-1, 0) \end{array}$$

$$D_f = (-a, -1) \cup (0, 1) \cup (1, a)$$

$$a)) \quad y = \sqrt{\left[x - \frac{1}{r}\right] + \left[x + \frac{r}{x}\right]}$$

$$D_f \subset \left[\frac{1}{\sqrt{2}}, \infty \right)$$

$$\begin{aligned} x + \frac{1}{x} &\geq 1 \\ x &\geq \frac{1}{x} \\ \uparrow \end{aligned}$$

$$-1) y = \sqrt{\left[x - \frac{1}{y}\right] + \left[\frac{1}{y} - x\right]}$$

$$\frac{x - \frac{1}{p}}{x - \frac{1}{p} \in \mathbb{Z} \quad x \in \mathbb{Z} + \frac{1}{p}}$$

$y_2(x) + [-x]e^x$

$$D_f = \{n \mid n = k + \cancel{1}, k \in \mathbb{Z}\}$$

الف) $y = \frac{\cot x + 1}{\tan x + 1}$  $\tan x + 1 \neq 0$ $\tan x \neq -1$
 $D_f = \mathbb{R} - \left\{ \frac{k\pi}{\pi}, k\pi - \frac{\pi}{4} \right\}$

ب) $y = \sqrt{1 - \sqrt{\sin x}}$ $1 - \sqrt{\sin x} \geq 0$ $\sqrt{\sin x} \leq 1$ $\sin x \leq \frac{1}{4}$ $-\frac{1}{2} \leq \sin x \leq \frac{1}{2}$
 $D_f = \left[k\pi - \frac{\pi}{6}, k\pi + \frac{\pi}{6} \right]$

الف) $y = \sqrt{\sqrt{\sin x} - 1}$ $\sqrt{\sin x} - 1 \geq 0$ $\sqrt{\sin x} \geq 1$ $\sin x \geq \frac{1}{4}$
 $D_f = \left[k\pi + \frac{\pi}{6}, k\pi + \frac{5\pi}{6} \right]$

ب) $y = \sqrt{1 - \sqrt{\cos x}}$ $1 - \sqrt{\cos x} \geq 0$ $\sqrt{\cos x} \leq 1$ $\cos x \leq \frac{1}{4}$
 $D_f = \left[k\pi + \frac{\pi}{3}, k\pi + \frac{2\pi}{3} \right]$

الف) $y = \arcsin(x^2 + 2x + 1)$ $-1 \leq x^2 + 2x + 1 \leq 1 + \frac{\pi}{2}$
 $D_f = [-3, -2] \cup [-1, 0]$
 $\frac{1}{4} \leq (x + \frac{1}{2})^2 \leq \frac{9}{4} \Rightarrow \frac{1}{2} \leq x + \frac{1}{2} \leq \frac{3}{2} \Rightarrow -1 \leq x \leq 1$

ب) $y = \sqrt{\delta - 2x}$ $-1 \leq \sqrt{\delta - 2x} \leq 1 \Rightarrow \delta - 2x \leq 1$ $2x \geq \delta - 1$ $x \geq \frac{\delta - 1}{2}$
 $\delta - 2x \geq 0$ $2x \leq \delta$ $x \leq \frac{\delta}{2}$
 $D_f = \left[\frac{\delta - 1}{2}, \frac{\delta}{2} \right]$

الف) $y = \log_r(1 - \log_r x)$ $1 - \log_r x > 0 \Rightarrow \log_r x < 1$ $x < r$
 $x > 0$ $D_f = (0, r)$
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 ب) $y = \log_r(1 - \log_r \frac{x}{r})$ $1 - \log_r \frac{x}{r} > 0 \Rightarrow \log_r \frac{x}{r} < 1 \Rightarrow x < r$
 $x > 0$ $0 < \frac{x}{r} < 1$
 $D_f = (0, \frac{1}{r})$

الف) $y = \sqrt{\sqrt{x^2 - x^2} - 1}$ $\sqrt{x^2 - x^2} - 1 \geq 0$ $\sqrt{x^2 - x^2} \geq 1$
 $x^2 - x^2 \geq 1$ $x^2 - x^2 + 1 \leq 0 \Rightarrow \frac{1}{x - 1} + \frac{1}{x + 1} \leq 0$
 ب) $y = \left(\frac{x + \delta}{x + 1} \right)!$
 $\frac{x + \delta}{x + 1} \in W \Rightarrow x = -\frac{\delta W - \delta}{\delta W - 1} = \frac{\delta - \delta W}{\delta W - 1}$
 $D_f = \left\{ x \mid x = \frac{\delta - \delta W}{\delta W - 1}, \delta W \in W \right\}$

$$9 - \text{ب) } y = \log_2 \left(1 - \log^{\frac{n}{2}} \right) \rightarrow \log^{\frac{n}{2}} \rightarrow n > 0.$$

$$\hookrightarrow 1 - \log^{\frac{n}{2}} > 0 \rightarrow \log^{\frac{n}{2}} < 1 \xrightarrow{\text{مناسب (1,0)}} n > \frac{1}{2}$$

$$Df_2 \left(\frac{1}{2}, +\infty \right)$$