

$$a) y = \frac{n+r}{r n^2 + r n^2 - 1 n + r}$$

(1)

$$P_f = \mathbb{R} - \left\{ -\frac{r}{r}, -1, 1 \right\}$$

$$\frac{\cancel{r n^2} + \cancel{r n^2} - 1 n + r}{\cancel{r n^2} + \cancel{r n^2}} \bigg| \frac{n-1}{r n^2 + 1 n + r}$$

$$\frac{r n^2 - 1 n + r}{-r n^2 + 1 n}$$

$$(r n^2 + 1 n + r)(n-1)$$

$$(n+r)(n+r)(n-1)$$

$$n = -\frac{r}{r} \quad n = -1 \quad n = 1$$

$$b) y = \frac{n+r}{r n^2 + 1 n + r}$$

$$\frac{\cancel{r n^2} + \cancel{r n^2} + 1 n + r}{\cancel{r n^2} + \cancel{r n^2}} \bigg| \frac{n+1}{r n^2 + 1 n + r}$$

$$\frac{r n^2 + 1 n + r}{-r n^2 - 1 n}$$

$$(n+1)(r n^2 + 1 n + r)$$

$$(n+1)(n+r)(n+1)$$

$$\mathbb{R} - \left\{ -\frac{r}{r}, -\frac{1}{r}, -1 \right\}$$

$$n = -\frac{r}{r} \quad n = -\frac{1}{r} \quad n = -1$$

$$a) y = \frac{n+r}{r n^2 - r n^2 - 1 n - 1}$$

$$\frac{n^2 - r n^2 + r n - 1}{n^2 - n + 1} \bigg| \frac{n-1}{n^2 - n + 1}$$

$$(n^2 - n + 1)(n-1)$$

$$P_f = \mathbb{R} - \{1\}$$

$$b) y = \frac{n+r}{r n^2 - r n^2 - r n - 1}$$

$$\frac{-r}{1} \quad \frac{1}{-}$$

$$P_f = (-\infty, -\frac{r}{r}) \cup (\frac{1}{r}, \infty)$$

$$y = \frac{r}{n^2 - \omega |n-1| - 1 n + \omega}$$

$$n > \frac{r}{n^2 - \omega |n-1| - 1 n + \omega}$$

$$n^2 - \omega |n-1| - 1 n + \omega = (n-\omega)(n+r)$$

$$n < \frac{r}{n^2 + \omega |n-1| - 1 n + \omega} \quad n \neq \omega \quad n \neq r$$

$$n^2 + \omega |n-1| - 1 n + \omega$$

$$n(n+r) \neq$$

$$n \neq \omega \quad n \neq r$$

$$P_f = \mathbb{R} - \left\{ \omega, -\frac{r}{r}, \omega, r \right\}$$

DATE / /

SUBJECT :

$$a) y = \sqrt{[a] - 2} \quad [a] - 2 \geq 0 \quad (1)$$

$$[a] \geq 2 \quad D_f = (-\infty, -2]$$

$$b) y = \frac{a^2 + 2}{[a] - 2[a] - 2} \quad ([a] - 2)([a] + 1) \neq 0$$

$$[a] \neq 2 \quad [a] \neq -1$$

$$D_f = \{ [2, \infty), [-1, \infty) \}$$

$$a) y = \sqrt{[a - \frac{1}{x}] + [a + \frac{1}{x}]} \quad +1 \quad [a - \frac{1}{x}] + [a + \frac{1}{x}] \geq 0 \quad (2)$$

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

$$[a + \frac{1}{x}] \geq 0$$

$$a + \frac{1}{x} \geq 0$$

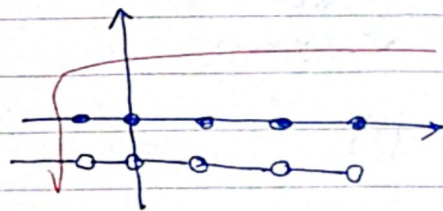
$$[\frac{1}{x} > +\infty)$$

$$D_f = [\frac{1}{x}, +\infty) \quad a \geq \frac{1}{x}$$

$$b) \sqrt{[a - \frac{1}{x}] + [\frac{1}{x} - a]}$$

$$\downarrow$$

$$[+][+] \geq 0$$



$$t \in \mathbb{Z}$$

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

$$a \in \mathbb{Z} + \frac{1}{x}$$

$$D_f = \{ a/n \mid n \in \mathbb{K}, k \}$$

$$y = \frac{\cot x + 1}{\tan x + 1} \rightarrow \sin x \cdot \tan x - 1 \neq 0 \quad \tan x \neq 1$$

$$\sin x \neq 0$$

$$\cos x \neq 0$$

$$D_f, D = \{ k\pi, k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2} \}$$



$$ب) \sqrt{1 - r \sin^2 \alpha}$$

$$1 - r \sin^2 \alpha \geq 0$$

$$-\frac{1}{r} \leq \sin \alpha \leq \frac{1}{r}$$

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

$$ج) y = \sqrt{r \sin x - 1}$$

$$r \sin x - 1 \geq 0$$

$$\sin x \geq \frac{1}{r}$$

$$D_f = \left[\frac{\pi}{r}, \frac{\pi}{r} \right]$$



(✓)

$$ب) y = \sqrt{1 - r \cos \alpha}$$

$$1 - r \cos \alpha \geq 0$$

$$\cos \alpha \leq \frac{1}{r}$$

$$D_f = \left[k\pi \pm \frac{\pi}{r} \right]$$



$$ج) \arcsin(\alpha^r + r\alpha + 1)$$

$$-1 \leq \sin(\alpha^r + r\alpha + 1) \leq 1$$

$$-1 \leq \alpha^r + r\alpha + 1 \leq 1$$

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

$$\begin{aligned} & \leq \alpha^r + r\alpha + 1 \\ & \leq (\alpha + 1)(\alpha + r) \end{aligned}$$

$$\frac{-r}{+} \mid \frac{-1}{-} \mid +$$

$$(-\infty, -r] \cup [-1, 0] \cap [-r, 0]$$

$$\begin{aligned} & \alpha^r + r\alpha + 1 \\ & \alpha(\alpha + r) \leq -r \\ & + \mid - \mid + \end{aligned}$$

$$ب) \cos y = \sqrt{\alpha - r\alpha}$$

$$-1 \leq \sqrt{\alpha - r\alpha} \leq 1$$

$$\alpha - r\alpha \leq 1$$

$$-\alpha \leq -r\alpha \leq -r$$

$$\frac{\alpha}{r} \geq \alpha \geq r$$

$$D_f = \left[r, \frac{\alpha}{r} \right]$$

$$(1 - \log_r^n)$$

$$\text{الف) } y = \log_r$$

$$1 - \log_r^n > 0$$

(9)

$$\log_r^n < 1$$

$$D_f = (r, +\infty)$$

$$n < r$$

$$n > -$$

$$\text{ب) } y = \log_r \left(\frac{1 - \log_r^n}{r} \right)$$

$$n > -$$

$$1 - \log_r^n > 0$$

$$\log_r^n < 1$$

$$n > \frac{1}{r}$$

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

$$\text{الف) } \sqrt{\frac{r^n - n^r}{r} - 1}$$

$$r^n - n^r > r^n$$

(1.)

$$D_f = [1, r]$$

$$r^n - n^r - (r^n - 2n^r + r^n) > 0$$

$$-(n - r)(n - 1) > 0$$

$$n > r \quad n > 1$$

$$\frac{1}{r} > 1$$

$$\text{ب) } \left(\frac{r^n - n^r}{r^n + \varepsilon} \right) !$$

$$\frac{r^n - n^r}{r^n + \varepsilon} \in W$$

$$r^n - n^r \in r^n W + \varepsilon W$$

$$r^n - r^n W \in -\varepsilon + \varepsilon W$$

$$n(r^n - r^n W) \in -\varepsilon + \varepsilon W$$

$$n \in \frac{-\varepsilon + \varepsilon W}{r^n - r^n W}$$

$$\{n / n > \frac{-\varepsilon + \varepsilon W}{r^n - r^n W}, K \in W\}$$