

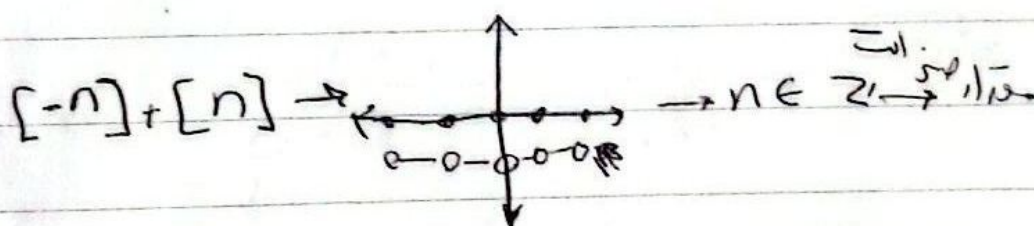
$$① \quad [-x] - 1 \geq 0 \quad [-x] \geq 1 \quad -x \geq 1 \rightarrow x \leq -1$$

$$\begin{aligned} \text{ب) } \frac{2x^2 + 4}{([x] - 3)([x] + 1)} \quad [x] = -1 \rightarrow -1 < x < 0 \\ [x] = 4 \rightarrow 4 \leq x < 5 \\ D_f = \mathbb{R} - [-1, 0) \cup [4, 5) \end{aligned}$$

$$② \text{ ا) } [x - \frac{1}{x}] + [x + \frac{1}{x}] \geq 0 \xrightarrow{+1} 1 [x + \frac{1}{x}] \geq \frac{1}{x}$$

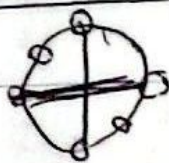
$$\rightarrow [x + \frac{1}{x}] \geq \frac{1}{x} \rightarrow [x + \frac{1}{x}] \geq 1 \quad x + \frac{1}{x} \geq 1 \rightarrow x \geq \frac{1}{x}$$

$$\text{ب) } [x - \frac{1}{x}] + [\frac{1}{x} - x] \geq 0 \Rightarrow x - \frac{1}{x} \in \mathbb{Z} \rightarrow x \in \mathbb{Z} + \frac{1}{x}$$



$$③ \text{ ا) } \frac{\cot x + 1}{\tan x + 1}$$

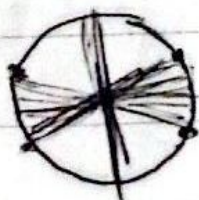
$$\tan x + 1$$



$$\hookrightarrow \tan x = -1 \rightarrow x = 2k\pi - \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}$$

$$D_f = \mathbb{R} - \left\{ \frac{k\pi}{4}, 2k\pi - \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4} \right\}$$

$$\text{ب) } 1 - \sin^2 x \geq 0 \quad \sin^2 x \leq \frac{1}{4} \rightarrow -\frac{1}{2} \leq \sin x \leq \frac{1}{2}$$



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

(v) $\omega) r \sin n - 1 > 0 \rightarrow \sin n > \frac{1}{r}$



$$D_f = \left[rK\pi + \frac{\pi}{4}, rK\pi + \frac{3\pi}{4} \right]$$

ب) $1 - r \cos n > 0 \rightarrow \cos n < \frac{1}{r}$



$$D_f = \left[rK\pi + \frac{\pi}{r}, rK\pi + \frac{2\pi}{r} \right]$$

(A) $\omega) -1 < x^r + rx + 1 < 1 \rightarrow x^r + rx < 0 \rightarrow x(x+r) < 0$ ①

$\rightarrow x^r + rx > 0 \rightarrow (x+1)(x+r) > 0$ ②

①

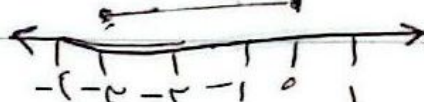
$$\frac{-r}{+|-|+}$$



$\rightarrow [-r, 0] \cup [-1, 0]$

②

$$\frac{-r}{+|-|+}$$



ب) $1 - \sqrt{a - rx} < 1 \rightarrow a - rx < 1 \rightarrow x > \frac{a-1}{r}$

$a - rx > 0 \rightarrow x < \frac{a}{r}$ $\cap \rightarrow \frac{a-1}{r} < x < \frac{a}{r}$

(9) $\omega) 1 - \log_n > 0 \rightarrow \log_n < 1 \rightarrow n < e$

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

(10) $\omega) \frac{r}{r} \in \omega \rightarrow r \in \omega \rightarrow r \in \omega \rightarrow r \in \omega \rightarrow r \in \omega$

$\rightarrow n^r - \frac{r}{r} < 0 \rightarrow (n-1)(n-r) < 0 \rightarrow \frac{1}{r} \in \omega \rightarrow [1, r]$

ب) $\frac{r}{r} \in \omega \rightarrow n \in \frac{r}{r} \rightarrow n = \frac{-rk + \Delta}{rk - r}, k \in \omega$