

١٩١٧٥ آئین خطی فوب نوشتار!

تکلیف ۴ بازدم دینه

الف) $\frac{x+3}{(x-1)(2x^2+5x-3)} = \frac{x+3}{(\frac{x-1}{1})(\frac{x-\frac{1}{2}}{-1})(\frac{x+3}{-1})}$

$R = \{-\frac{1}{2}, -3\}$

①

ب) $\frac{x+3}{(x+1)(2x^2+5x+3)} = \frac{x+3}{(x+1)(x+\frac{1}{2})(x+3)}$ → $R = \{-\frac{1}{2}, -1, \frac{1}{3}\}$ ②

الف) $\frac{x+3}{(\frac{x-1}{1})(\frac{x^2-x+1}{\Delta < 0})}$ → $R = \{1\}$ ③

③

ب) $\sqrt{\frac{x+3}{(\frac{x-1}{1})(\frac{x^2-x+1}{\Delta < 0})}} \rightarrow \frac{-3}{+3-3+1}$ $R = \{-3, 1\}$

$x^2 - \omega(x-1) - 2x + \omega \neq 0$

④

$\begin{cases} x > 1 \rightarrow x^2 - \omega x + \omega - 2x + \omega = 0 \rightarrow x^2 - \omega x + 2\omega = 0 \rightarrow \frac{(x-\omega)(x-2\omega)}{x} = 0 \\ x < 1 \rightarrow x^2 + \omega x - \omega - 2x + \omega = 0 \rightarrow x^2 + \omega x = 0 \rightarrow \frac{x(x+\omega)}{-x} = 0 \end{cases}$

$R = \{-2, 0, 2, \omega\}$ ⑤

الف) $[-x] - 2 > 0 \rightarrow [-x] > 2 \rightarrow -x > 2 \rightarrow x < -2 \rightarrow (-\infty, -2]$ ⑥

ب) $[x]^2 - 2[x] - 3 \neq 0 \xrightarrow{[x]=t} t^2 - 2t - 3 \neq 0 \rightarrow \frac{(t-1)(t-3)}{t}$ ⑦

$[x] = 3 \rightarrow 2 < x < 4 \quad [x] = -1 \rightarrow -1 < x < 0 \rightarrow (-\infty, -1) \cup (0, 3) \cup [4, +\infty) \rightarrow R = (-1, 0) \cup [3, 4)$

الف) $[x - \frac{1}{x}] + [x + \frac{x}{x}] > 0 \rightarrow x[x + \frac{x}{x}] - 1 > 0 \rightarrow [x + \frac{x}{x}] > \frac{1}{x} \rightarrow x + \frac{x}{x} > 1 \rightarrow x > \frac{1}{x} \rightarrow x > \frac{1}{x} \rightarrow [\frac{1}{x}, +\infty)$ ⑧

⑧

ب) $[x - \frac{1}{x}] + [\frac{1}{x} - x] \xrightarrow{[x]+[x]} \begin{matrix} \in \mathbb{Z} \rightarrow 0 \\ \notin \mathbb{Z} \rightarrow -1 \end{matrix} \rightarrow \{x | x = k + \frac{1}{k}, k \in \mathbb{Z}\}$

الف) $\sin x \neq 0 \rightarrow R = \pi, 2\pi$

$\tan x + 1 \neq 0 \rightarrow \tan x \neq -1 \rightarrow R = \frac{\pi}{4}, \frac{5\pi}{4} \rightarrow R = \{2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4} + k\pi\}$ ⑨

$\cos x \neq 0 \rightarrow R = \frac{\pi}{2}, \frac{3\pi}{2}$

⑨

$[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}] \cup [2k\pi - \frac{\pi}{4}, 2k\pi + \frac{\pi}{4}] \cup [2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{5\pi}{4}]$

ب) $1 - \epsilon \sin x > 0 \rightarrow \epsilon \sin x < 1 \rightarrow \sin x < \frac{1}{\epsilon} \rightarrow \frac{1}{\epsilon} < \sin x < \frac{1}{\epsilon} \rightarrow [-\frac{\pi}{4}, \frac{\pi}{4}] \cup [\frac{3\pi}{4}, \frac{5\pi}{4}]$

جواب ۲۴ هارا نوشتار!

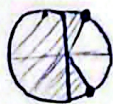
الف) $2 \sin x > 1 \rightarrow \sin x > \frac{1}{2}$



$[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

⑩

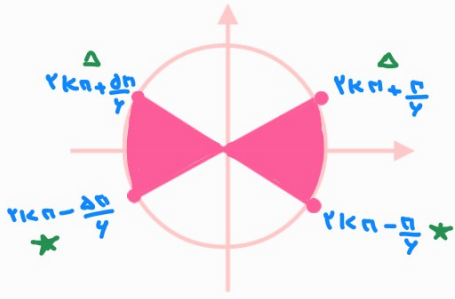
ب) $1 - 2 \cos x > 0 \rightarrow \cos x < \frac{1}{2}$



$[2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$

⑪

4- ب) $1 - r \sin^2 n \geq 0 \rightarrow r \sin^2 n \leq 1 \rightarrow \sin^2 n \leq \frac{1}{r} \rightarrow -\frac{1}{\sqrt{r}} \leq \sin n \leq \frac{1}{\sqrt{r}}$



$\rightarrow D_f = [k\pi - \frac{\pi}{\sqrt{r}}, k\pi + \frac{\pi}{\sqrt{r}}]$