

(الف) جمع ضرایب مربع ضرایب $\rightarrow \frac{2n^2 + 3n^2 - 1n + 3}{-(2n^2 - 2n^2)} \mid n-1$ (۱)

$$\frac{2n^2 + 3n^2 - 1n + 3}{-(2n^2 - 2n^2)} \mid n-1$$

$$\frac{5n^2 - 1n + 3}{-(5n^2 - 5n)}$$

$$\rightarrow y = \frac{n+3}{(n-1)(n+3)(2n-1)}$$

$$D = R - \left\{ -\frac{1}{2}, \frac{1}{4}, 1 \right\}$$

(ب) در مجموع جمع ضرایب توان های زوج با فرد برابر است $\rightarrow \frac{2n^3 + 9n^2 + 10n + 3}{-(2n^3 + 2n^2)} \mid n+1$

$$\frac{2n^3 + 9n^2 + 10n + 3}{-(2n^3 + 2n^2)}$$

$$\frac{7n^2 + 10n + 3}{-(7n^2 + 7n)}$$

$$\rightarrow y = \frac{n+3}{(2n+1)(n+3)(n+1)}$$

$$D = R - \left\{ -\frac{1}{2}, -1, \frac{1}{4} \right\}$$

(الف) جمع ضرایب مربع ضرایب $\rightarrow \frac{n^2 - 2n^2 + 2n - 1}{-(n^2 - n^2)} \mid n-1$ (۲)

$$\frac{n^2 - 2n^2 + 2n - 1}{-(n^2 - n^2)}$$

$$\frac{-n^2 + 2n - 1}{-(-n^2 + n)}$$

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

$$D = R - \left\{ 1 \right\}$$

ب) $\frac{x+3}{(x-1)(x^2-x+1)} > 0$
 $\frac{x+3}{(x-1)(x^2-x+1)}$
 $\frac{x+3}{(x-1)(x^2-x+1)}$
 $\frac{x+3}{(x-1)(x^2-x+1)}$

$\frac{-3}{+1-1+}$

$D = \mathbb{R} \setminus \{-\infty, -3\} \cup (1, +\infty)$

د

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

$x < 1 \rightarrow x^2 + \omega x - \omega - 2x + \omega \neq 0 \rightarrow x^2 + 3x \neq 0$
 $x(x+3) \neq 0 \rightarrow x \neq 0, x \neq -3$

$D = \mathbb{R} \setminus \{-3, 0, \omega\}$

د

الف) $[-x] - 2 > 0 \rightarrow [-x] > 2$

$D = \mathbb{R} \setminus \{-2\}$

د

ب) $\frac{[x]-3}{3 < x < 4} \cdot \frac{[x]+1}{-1 < x < 0} \neq 0$

$D = \mathbb{R} \setminus \{[-1, 0) \cup [3, 4)\}$

د

الف) $[x - \frac{1}{3}] + [x + \frac{2}{3}] > 0$ $\rightarrow [x - \frac{1}{3} + 1] + [x + \frac{2}{3}] > 1$

$\rightarrow 2[x + \frac{2}{3}] > 1 \rightarrow [x + \frac{2}{3}] > \frac{1}{2} \rightarrow x > \frac{1}{3} \rightarrow D = [\frac{1}{3}, +\infty)$

ب) $[x - \frac{1}{3}] + [\frac{1}{3} - x] > 0 \rightarrow a \in \mathbb{Z} \rightarrow x - \frac{1}{3} \in \mathbb{Z}$

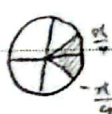
$D = \{x \mid x = k + \frac{1}{3}, k \in \mathbb{Z}\}$

الف) $D = \mathbb{R} \setminus \{k\pi, k\pi - \frac{\pi}{2}\}$



د

ب) $1 - \epsilon \sin^2 u > 0 \rightarrow \sin^2 u < \frac{1}{\epsilon} \rightarrow -\frac{1}{\sqrt{\epsilon}} < \sin u < \frac{1}{\sqrt{\epsilon}}$

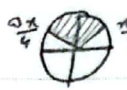


$D = [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}]$

د

٧- الف) $\sqrt{2} \sin n - 1 \geq 0 \rightarrow \sin n \geq \frac{1}{\sqrt{2}} \rightarrow \mathcal{D} = [2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}]$

الف) $\sqrt{2} \sin n - 1 \geq 0 \rightarrow \sin n \geq \frac{1}{\sqrt{2}} \rightarrow \mathcal{D} = [2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}]$ ①

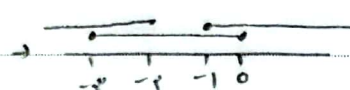
 ! دنتا ؟ (1.5)

ب) $1 - \sqrt{2} \cos n \geq 0 \rightarrow \cos n \leq \frac{1}{\sqrt{2}} \rightarrow \mathcal{D} = [2k\pi - \frac{\pi}{4}, 2k\pi + \frac{\pi}{4}]$

 ! $\mathcal{D} = [2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4}]$

الف) $-1 \leq \sqrt{x^2 + 3x + 1} \leq 1 \rightarrow x^2 + 3x + 1 \leq 1 \rightarrow x(x+3) \leq 0$ ②

$\rightarrow x^2 + 3x + 1 \geq 0 \rightarrow (x+1)(x+2) \geq 0$

 ! $\mathcal{D} = [-3, 0]$ (2)

ب) $\omega - \sqrt{2} \sin x \geq 0 \rightarrow \sin x \leq \frac{\omega}{\sqrt{2}}$ ③

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

! $\mathcal{D} = [x, y, \omega]$

الف) $x > 0 \quad 1 - \log_{\frac{1}{x}} x \geq 0 \rightarrow \log_{\frac{1}{x}} x \leq 1 \rightarrow x \leq \frac{1}{x}$ ④

$\rightarrow \mathcal{D} = (0, 1]$ (3)

ب) $x > 0 \quad 1 - \log_{\frac{1}{x}} x \geq 0 \rightarrow \log_{\frac{1}{x}} x \leq 1 \rightarrow x \geq \frac{1}{x}$

$\rightarrow \mathcal{D} = (\frac{1}{x}, +\infty)$

الف) $x^{2n-2} - 1 \geq 0 \rightarrow x^{2n-2} \geq 1 \rightarrow x^{2n-2} \geq 1$ ⑤

$\rightarrow x^2 - 2x + 1 \geq 0 \rightarrow \frac{1}{x} - \frac{1}{x} + 1 \rightarrow \mathcal{D} = [1, 3]$

$$\text{b) } \frac{\gamma K + \omega}{\gamma K + \epsilon} \in W \rightarrow u_s = \frac{\epsilon W - \omega}{\gamma W - \gamma} \quad \textcircled{D}$$

$$\rightarrow D = \left\{ u \mid u_s = \frac{-\epsilon K + \omega}{\gamma K - \gamma}, K \in W \right\}$$