

① جمع ضرب = ۰

$$2n^3 + 3n^2 - 11n + 3 \neq 0$$
 (الف)
$$(n-1)(2n^2 + 5n + 3) \neq 0$$
 ب. $n=1$ به اشتباه است

$$(n-1)(2n-1)(n+3) \neq 0 \sim n \neq 1, -\frac{1}{2}, -3$$
 } $P_f \uparrow \mathbb{R} - \{1, -\frac{1}{2}, -3\}$

② جمع ضرب = ۰

$$2n^3 + 9n^2 + 10n + 3 \neq 0$$
 (ب)
$$(n+1)(2n^2 + 7n + 3) \neq 0$$
 جمع ضرب = ۰

$$(n+1)(2n+1)(n+3) \neq 0$$
 ب. $n+1$ به اشتباه است

$$n \neq -1, -\frac{1}{2}, -3$$
 } $P_f \uparrow \mathbb{R} - \{-1, -\frac{1}{2}, -3\}$

③ جمع ضرب = ۰

$$n^3 - 2n^2 + 2n - 1 \neq 0$$
 (الف)
$$(n-1)(n^2 - n + 1) \neq 0$$
 ب. $n=1$ به اشتباه است

$$\Delta < 0$$

$$n \neq 1$$
 } $P_f \uparrow \mathbb{R} - \{1\}$

④
$$\sqrt{\frac{n+3}{n^2 - 2n^2 + 2n - 1}} \Rightarrow \frac{-3 \pm 1}{+ \mid - \mid +}$$

$$(n-1)(n^2 - n + 1)$$
 ب.
$$P_f \uparrow \mathbb{R} - [-3, -1] \cup (1, +\infty)$$

⑤ ۱) $n \geq 1 \rightarrow n^2 - 7n + 10 \sim (n-2)(n-5) \Rightarrow n \neq 2, 5$
 ۲) $n < 1 \rightarrow n^2 + 3n = n(n+3) \neq 0 \sim n \neq 0, -3$

$$P_f = \mathbb{R} - \{-3, 0, 2, 5\}$$

الف) $y = \sqrt{[-x] - 2}$

(3)

$$[-x] - 2 \geq 0 \quad [-x] \geq 2 \Rightarrow x \leq -2$$

$$D_f = (-\infty, -2]$$

ب) $[x]^2 - 2[x] - 3 \neq 0$

$$[x] \leq t \rightarrow (t^2 - 2t - 3 \neq 0) \quad t = [x] \rightarrow -3 < x < 6$$

$$(t-3)(t+1) \neq 0 \quad t = -1 \leq [x] \rightarrow -1 \leq x < 0$$

$$D_f = \mathbb{R} - \{[-1, 0) \cup [3, 6)\}$$

(2)

الف) $[x - \frac{1}{k}] + [x + \frac{1}{k}] \geq 0$

(4)

$$2[x - \frac{1}{k}] + 1 \geq 0 \rightarrow [x - \frac{1}{k}] \geq -\frac{1}{k} \Rightarrow [x - \frac{1}{k}] \geq 0$$

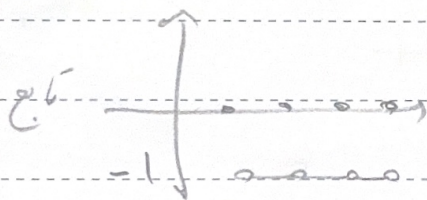
$$x - \frac{1}{k} \geq 0 \Rightarrow x \geq \frac{1}{k}$$

$$D_f = [\frac{1}{k}, +\infty)$$

ب) $[x - \frac{1}{k}] + [\frac{1}{k} - x] \rightarrow$ فرم

$$[x] - [-x]$$

(2)



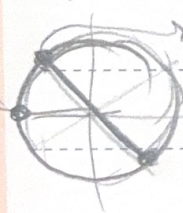
$$x - \frac{1}{k} \in \mathbb{Z} \Rightarrow x \in \mathbb{Z} + \frac{1}{k}$$

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

$$\subseteq D_f = \{x \mid x = k + \frac{1}{k}, k \in \mathbb{Z}\}$$

(4)

الف) $\tan x + 1 \neq 0 \Rightarrow \tan x \neq -1$



$$k\pi = \frac{3\pi}{4}$$

$$\sin x \neq 0 \rightarrow k\pi$$

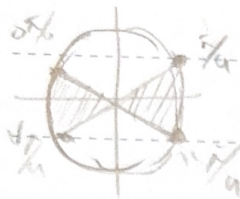
$$\cos x \neq 0 \rightarrow x \neq k\pi + \frac{\pi}{2}$$

$$D_f = \mathbb{R} -$$

$$\{k\pi, k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{4}\}$$

$$b) 1 - r \sin^2 x \geq 0$$

$$r \sin^2 x \leq 1 \Rightarrow -\frac{1}{r} \leq \sin x \leq \frac{1}{r}$$

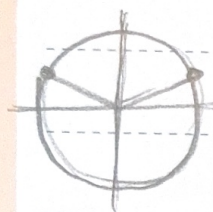


$$\rightarrow P_f = [k\pi - \pi/4, k\pi + \pi/4]$$

(P)

$$r \sin x \geq 1$$

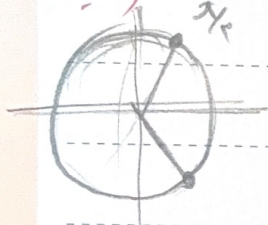
$$a) r \sin x \geq 1 \Rightarrow \sin x \geq 1/r$$



$$P_f = [k\pi + \pi/4, k\pi + 3\pi/4]$$

(V)

$$b) 1 - r \cos x \geq 0 \Rightarrow r \cos x \leq 1 \Rightarrow \cos x \leq 1/r$$



$$P_f = [k\pi + \pi/2, k\pi + 3\pi/2]$$

(P)

$$a) \rightarrow -1 \leq x^2 + 3x + 1 \leq 1$$

(A)

$$D \rightarrow x^2 + 3x \leq 0 \Rightarrow x(x+3) \leq 0 \Rightarrow x \in [-3, 0]$$

$$D \cap P \Rightarrow$$

$$P \rightarrow x^2 + 3x + 1 \geq 0 \Rightarrow x \in (-\infty, -1] \cup [1, \infty)$$

$$(x+1)/(x+3) \geq 0 \Rightarrow x \in (-\infty, -3] \cup [-1, \infty)$$

$$[-3, -1] \cup [1, 0]$$

ب) $\sqrt{d-1}n \geq 0 \Rightarrow n \leq \frac{d}{2}$

① $-0.1 \leq \sqrt{d-2n} \leq 1 \Rightarrow d-2n \leq 1$
 $\hookrightarrow n \geq 2$

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Q. 279.

$$\{ \text{one} \} \sim \text{one} = (1, 1)$$

الف

② $1 - \log_p^n > 0 \rightarrow \log_p^n < 1 \rightarrow n < p$

$$\textcircled{1} n \geq 0 \quad \left\{ P_A = \textcircled{1} \textcircled{1} \textcircled{1} = (1/4, +\infty) \right.$$

ب) ① $1 - \log_{\frac{1}{4}}^n > 0 \Rightarrow \log_{\frac{1}{4}}^n < 1 \rightarrow n > \frac{1}{2}$

الف) $2^{n-2^r} - 1 \geq 0 \Rightarrow 2^{n-2^r} \geq 1 = 2^0 \Rightarrow \rho_f = [1, 2^r]$ (10)

$$P(n - n^r), r \Rightarrow \frac{n^r - P(n + r)}{(n - 1)(n - r)}$$

c.) $\frac{r_n + d}{r_n + c} \cdot e^w \rightarrow -\frac{e^w + d}{r^w - r} \Rightarrow P_f = \left\{ n | n = \frac{d - e^w}{r^w - r}, k \in \mathbb{N} \right\}$