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Date:

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Subject:

الف) $2n^3 + 3n^2 - 1n + 2 \neq 0 \leadsto (n-1)(2n^2 + 5n - 3) \neq 0$ (1)

$Df_2 R = \{1, \frac{1}{2}, -3\}$

ب) $2n^3 + 9n^2 + 6n + 2 \neq 0 \leadsto (n+1)(2n^2 + 7n + 2) \neq 0$

$Df_2 R = \{-1, -\frac{2}{3}, -\frac{1}{2}\}$

الف) $n^3 - 2n^2 + 2n - 1 \neq 0 \leadsto (n-1)(n^2 - n + 1) \neq 0$ (2)

$Df_2 R = \{1\}$

ب) $\frac{n+2}{n^3 - 2n^2 + 2n - 1} \neq 0$

$Df_2 (-\infty, 2] \cup (1, +\infty)$

$n^2 - \delta |n-1| - 2n + \delta \neq 0$ $\begin{cases} n \geq 1 \leadsto n^2 - 2n + \delta \neq 0 \leadsto n \neq 1, \delta \\ n < 1 \leadsto n^2 + 3n \neq 0 \leadsto n \neq 0, -3 \end{cases}$ (3)

$Df_2 R = \{0, -3, 1, \delta\}$

الف) $[-n] - 2 \geq 0 \leadsto [-n] \geq 2 \leadsto Df_2 (-\infty, -2]$ (4)

ب) $[n]^2 - 2[n] - 3 \neq 0 \leadsto ([n] - 3)([n] + 1) \neq 0$

$[n] \neq 3 \rightarrow Df_2 R = ([3, 4) \cup [0, 0])$ (5)

$[n] \neq -1$

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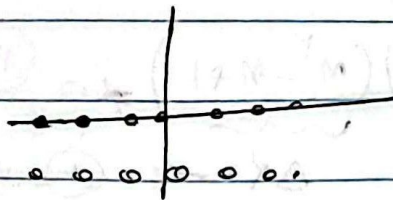
$$\left[n - \frac{1}{r}\right] + \left[n + \frac{r}{r}\right] \geq 0 \leadsto \left[n + 1 + \frac{r}{r}\right] \geq \left[n + \frac{r}{r}\right] - 1 + \left[n + \frac{r}{r}\right] \quad (5)$$

(الف)

$$r \left[n + \frac{r}{r}\right] \geq 1 \leadsto \left[n + \frac{r}{r}\right] \geq \frac{1}{r} \rightarrow n + \frac{r}{r} \geq 1 \leadsto$$

$$n \geq \frac{1}{r} \rightarrow \text{Def}_2 \left[\frac{1}{r}, +\infty\right)$$

$$\Rightarrow \left[n - \frac{1}{r}\right] + \left[\frac{1}{r} - n\right] \geq 0 \rightarrow [n] + [-n] \geq 0$$

~~Def_2~~

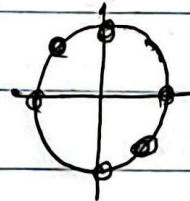
اعداد صحیح

$$\text{Def}_2 = \left\{ n \mid n = k + \frac{1}{r}, k \in \mathbb{Z} \right\}$$

$$(الف) \sin n \neq 0$$

$$\tan n \neq -1, \cos n \neq 0$$

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

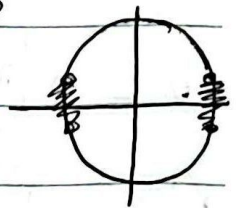


(6)

$$\Rightarrow 1 - r \sin^2 n \geq 0 \leadsto (1 - r \sin n)(1 + r \sin n) \geq 0$$

$$\leadsto \sin^2 n \leq \frac{1}{r} \leadsto -\frac{1}{r} \leq \sin n \leq \frac{1}{r}$$

$$\text{Def}_2 \left[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right]$$



$$r \sin n = 1 \leadsto \sin n \leq \frac{1}{r}$$

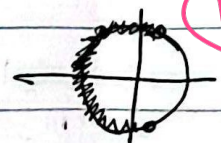
$$(الف) \text{Def}_2 \left[2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4} \right]$$



(7)

$$\Rightarrow 1 - r \cos^2 n \geq 0 \leadsto 1 \geq r \cos^2 n \leadsto \frac{1}{r} \geq \cos^2 n$$

$$\text{Def}_2 \left[2k\pi + \frac{\pi}{3}, 2k\pi + \frac{2\pi}{3} \right]$$



(8)

استدلالی بنابرین: ابتدای آن نقطه باشد

$$-1 < n^2 + 3n + 1 < 1 \rightarrow n^2 + 3n < 0 \rightarrow (n)(n+3) < 0 \quad \frac{-3}{+0-0+}$$

الف) $0 < n^2 + 3n + 2 \rightarrow 0 < (n+1)(n+2) \quad \frac{-2}{+0-0+}$

$$Df_2[-3, -1] \cup [-1, 0]$$

ب) $0 < 2n < 0 \rightarrow 0 < 2n \rightarrow \frac{0}{2} < n$

$$-1 < \sqrt{0-2n} < 1 \rightarrow 0 < 0-2n < 1$$

$$f < 2n \rightarrow 2 < n \quad Df_2[2, \infty)$$

الف) $n < 0 \rightarrow 1 - \log_n n < 0 \rightarrow 1 < \log_n n$

$$n < n \quad Df_2(0, 1)$$

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

$$\log_{\frac{1}{n}} n < 1 \rightarrow n < \frac{1}{n} \rightarrow Df_2(0, \frac{1}{n})$$

$$\log_{\frac{1}{n}} n < 1 \rightarrow n < \frac{1}{n} \rightarrow Df_2(\frac{1}{n}, +\infty)$$

الف) $f(n-n^2) > 3 \rightarrow f(n-n^2) > 3$

$$f(n-n^2) > 3 \rightarrow n^2 - 2n + 3 < 0 \rightarrow (n-1)(n-2) < 0$$

$$Df = [1, 2]$$

Arman

$$\rightarrow) \frac{r_n + \delta}{r_n + \varepsilon} \in W \rightarrow r_n W + \varepsilon W = r_n + \delta$$

$$r_n W - r_n = \delta - \varepsilon W \rightarrow (r_n) (r_n - r) = \delta - \varepsilon W$$

$$r_n = \frac{\delta - \varepsilon W}{r_n - r} \rightarrow D_f = \left\{ r_n \mid r_n = \frac{\delta - \varepsilon k}{r_k - r}, k \in W \right\}$$

$$v - b) \quad 1 - r \cdot \sin \theta \rightarrow \cos \theta \leq \frac{1}{r}$$

$$\rightarrow D_f = [r_k n + \frac{n}{r}, r_k n + \frac{an}{r}]$$

$$a - b) \quad y = \log_r \left(1 - \log^n \frac{1}{r} \right) \rightarrow \log^n \frac{1}{r} \rightarrow n > .$$

$$\rightarrow 1 - \log^n \frac{1}{r} > 0 \rightarrow \log^n \frac{1}{r} < 1 \xrightarrow{\text{مناسب (1,0)}} n > \frac{1}{r}$$

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