

الف) $2m^3 + 3m^2 - 1m + 2 \neq 0 \rightsquigarrow (m-1)(2m^2 + 5m - 3) \neq 0$ (1)

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

ب) $2m^3 + 9m^2 + 6m + 2 \neq 0 \rightsquigarrow (m+1)(2m^2 + 7m + 2) \neq 0$

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

الف) $m^3 - 2m^2 + 2m - 1 \neq 0 \rightsquigarrow (m-1)(m^2 - m + 1) \neq 0$ (2)

$Df_2 R = \{1\}$

ب) $\frac{m+2}{m^3 - 2m^2 + 2m - 1} \rightsquigarrow \frac{m+2}{(m-1)(m^2 - m + 1)}$

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

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

$Df_2 R = \{0, -3, 2, \delta\}$

الف) $[-m] - 2 \geq 0 \rightarrow [-m] \geq 2 \rightsquigarrow Df_2 (-\infty, -2]$ (4)

ب) $[m]^2 - 2[m] - 3 \neq 0 \rightsquigarrow ([m] - 3)([m] + 1) \neq 0$

$[m] \neq 3 \rightarrow Df_2 R = ([3, 4) \cup [-1, 0))$

$[m] \neq -1$

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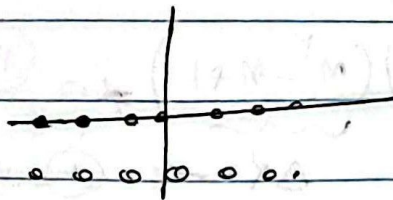
$$\left[n - \frac{1}{r}\right] + \left[n + \frac{r}{r}\right] \neq 0 \leadsto \left[n + 1 + \frac{r}{r}\right] = \left[n + \frac{r}{r}\right] - 1 + \left[n + \frac{r}{r}\right] \quad (\omega)$$

(الف)

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

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

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

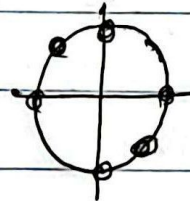

~~Def_2~~

المسافة 1/r

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

$$(الف) \sin n \neq 0$$

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



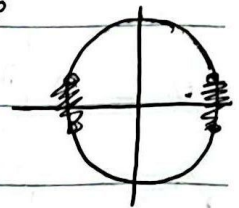
(6)

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

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

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

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



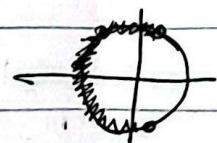
$$r \sin n = 1 \neq 0 \leadsto \sin n < \frac{1}{r}$$



(✓)

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

$$\Rightarrow 1 - r \cos n \neq 0 \rightarrow 1 \neq r \cos n \rightarrow \frac{1}{r} \neq \cos n$$



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

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

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

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

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

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

$$f < 2n \rightarrow 2 < n \quad Df_z[2, 2]$$

الف) 9

$$n < 0, 1 - \log_n^n < 0 \rightarrow 1 < \log_n^n$$

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

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

$$\log_{\frac{1}{r}}^n < 1 \rightarrow n < \frac{1}{r} \rightarrow Df_z(0, \frac{1}{r})$$

الف) $f < n - n^r \rightarrow f < n - n^r$

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

$$Df = [1, 2]$$

Arman

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

$$r_H W - r_H = \delta - \varepsilon W \rightarrow (r_H)(r_W - r) = \delta - \varepsilon W$$

$$r_H = \frac{\delta - \varepsilon W}{r_W - r} \rightarrow P_f = \left\{ r_H \mid r_H = \frac{\delta - \varepsilon k}{r_k - r}, k \in W \right\}$$