

[illegible]

$$\text{الف) } \frac{x^n - nx^{n-1} + n-1}{-x^n + nx^{n-1} - n+1} \xrightarrow{\Delta < 0} (n-1) \frac{(x^n - nx^{n-1})}{x^n - nx^{n-1}} \neq 0 \rightarrow n \neq 1$$

$$b) \frac{n+1}{(n-1)(n^2-1)} \geq 0 \rightarrow \frac{-1}{+ \infty - \infty} \rightarrow (-\infty, -1] \cup (1, +\infty)$$

① if $n \geq 1 \rightarrow m-1 = n-1 \rightarrow n^C - \omega^{m-d} = n^C - \omega^{n-d} = n^C - \omega^{n-1} \rightarrow (n^C)/(n-1)$

$\rightarrow M \neq \Gamma, \Omega$ ⑤ if $q \in I \rightarrow |M-1| = 1-M \rightarrow n_{\Omega+\Omega}^{\Gamma} M - n_{M+\Omega}^{\Gamma} = n_{\Gamma}^{\Gamma} + n_M^{\Gamma}$

$$\rightarrow \mathcal{N}(n+c) \neq 0 \rightarrow n \neq 0, -\infty \Rightarrow n \neq 1, \omega, 0, -\infty$$

الف) $[-\eta]_{-2} = 0 \rightarrow [-\eta]_{-2} \rightarrow \eta_{-2}$

$$b) [n] = t \rightarrow t - (t - n) \neq 0 \rightarrow (t - n) / (t + 1) \neq 0 \rightarrow t \begin{cases} n = [n] \rightarrow [n, t) \\ -1 = [n] \rightarrow [-1, 0) \end{cases} \} (R - [1, 0)) \cup [n, t)$$

$$\text{الف) } \left[n - \frac{1}{2} \right] + \left[n + \frac{1}{2} \right] \geq 0 \rightarrow \left[n + \frac{1}{2} - 1 \right] + \left[n + \frac{1}{2} \right] \geq 0 \rightarrow 2 \left[n + \frac{1}{2} \right] - 1 \geq 0 \quad - \text{د}$$

$$\rightarrow \left[n + \frac{1}{2} \right] \rightarrow \frac{1}{2} \rightarrow n + \frac{1}{2}$$

$$\text{ب) } \left[n - \frac{1}{2} \right] \left[-n + \frac{1}{2} \right] \rightarrow \left[n - \frac{1}{2} \right] + \left[-\left(n + \frac{1}{2} \right) \right] \rightarrow \begin{cases} [n] - [-n] \xrightarrow{\text{if}} n \in \mathbb{Z} \rightarrow 0 \\ [n] + [-n] \xrightarrow{\text{if}} n \notin \mathbb{Z} \rightarrow -1 \end{cases}$$

$$\rightarrow \{n \mid n = k + \frac{1}{r}, k \in \mathbb{Z}\}$$

الف) $\tan n + 1 \neq 0 \rightarrow \tan n \neq -1 \rightarrow 1A - \left\{ k\pi + \frac{3\pi}{4} \right\}$ -9

ب) $1 - \sin n > 0 \rightarrow 1 > \sin n \rightarrow \frac{1}{2} > \sin n \rightarrow -\frac{1}{2} < \sin n < \frac{1}{2} \rightarrow$ ~~scribbled out~~
 $\left[k\pi + \frac{\pi}{6}, k\pi - \frac{\pi}{6} \right]$

الف) $\sin n - 1 > 0 \rightarrow \sin n > \frac{1}{2} \rightarrow \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$ ✓

ب) $1 - \cos n > 0 \rightarrow \frac{1}{2} > \cos n \rightarrow \left[2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3} \right]$

الف) $\frac{n^2 + n + 1}{n^2 + n + 1} \rightarrow n^2 + n + 1 > 0 \rightarrow n^2 + n > -1 \rightarrow n(n+1) > -1 \rightarrow \frac{-1 \pm \sqrt{1-4}}{2} = \frac{-1 \pm \sqrt{-3}}{2}$ -1
 $n^2 + n + 1 > -1 \rightarrow n^2 + n > -2 \rightarrow (n+1)(n) > -2 \rightarrow \frac{-1 \pm \sqrt{1-4}}{2} = \frac{-1 \pm \sqrt{-3}}{2} \rightarrow [-\infty, -2] \cup [-1, +\infty)$
 ب) $\omega - \cos n > 0 \rightarrow \omega > \cos n \rightarrow \frac{\omega}{2} > n$, $-1 < \sqrt{d - \cos n} < 1 \rightarrow d - \cos n < 1 \rightarrow \cos n > d - 1$
 $\Rightarrow \left[\frac{d-1}{2}, \frac{d+1}{2} \right]$

الف) $n > 0$, $1 - \log_n n > 0 \rightarrow 1 > \log_n n \rightarrow n < n \Rightarrow 0 < n < n$ -9

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

الف) $\frac{n^2 - n^2}{n^2 - n^2} > 0 \rightarrow 2 > 1 \rightarrow n^2 - n^2 > 0 \rightarrow n^2 - n^2 > 0 \rightarrow (n-1)(n-1) > 0 \rightarrow \frac{1}{2} < n < \frac{3}{2}$ -10

ب) $\frac{n^2 + d}{n^2 + e} \in W \rightarrow (Wn + d) - (Wn + e) = n^2 + d - n^2 - e = d - e = n \rightarrow \frac{eW - d}{n - eW} = n$

$\rightarrow \left\{ n \mid n = \frac{eW - d}{n - eW}, n \in W \right\}$