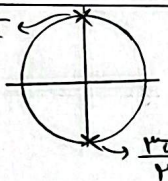


$(a-p)x^p + ax + b \geq 0$ $D_F = [p, +\infty)$ ب) $\Delta \leq 0 \rightarrow a-p=0 \rightarrow a=p$ $4x+b \geq 0 \xrightarrow{x=p} 4+b=0 \rightarrow b=-4$	۱
$x^p + px + p - m^p \geq 0$ $D_F = R \rightarrow \Delta \leq 0 \rightarrow b^p - 4ac \leq 0 \rightarrow p - 4(p-m^p) \leq 0$ ب) $\Delta \leq 0$ $1 \leq p-m^p \rightarrow m^p \leq 1 \rightarrow [-1, 1]$ $\overline{\max m} = 1$ ← بیشترین $\overline{\min m} = -1$ ← کمترین $\rightarrow$ اضعاف $= [p]$	۲
$F - x^p \geq 0 \rightarrow F \geq x^p \rightarrow x^p \leq F \rightarrow [x^p \leq F]$ $[x] + [-x] + 1 \neq 0 \rightarrow [x] + [-x] = -1$ ب) $[x] + [-x] \xrightarrow{x \in \mathbb{Z}} 0$ $\xrightarrow{x \notin \mathbb{Z}} -1$ $\xrightarrow{x \in \mathbb{Z}} [x \notin 2]$ $\xrightarrow{[x] - 1 \leq 0 \leq [x]}$	۳
الف) $x^p + px^p \geq 0 \rightarrow x^p(x+p) \geq 0$ $D_F = [-p, +\infty)$ ب) $(x^p-1)(x^p-px^p) \geq 0 \rightarrow \frac{(x^p-1)(x^p-px^p)}{x^p-1} \geq 0$ $\Delta = b^p - 4ac = 1 - p \leq 0$ $D_F = (-\infty, -1] \cup \{0\} \cup [p, +\infty)$	۴
الف) $(x-p) - p \geq 0 \rightarrow x-p \geq p \rightarrow x+p \geq p \rightarrow x \geq 0$ $x-p \leq -p \rightarrow x \leq -1$ $D_F = (-\infty, -1] \cup [0, +\infty)$ ب) $y = \sqrt{F - (p-x)}$ $F - (p-x) \geq 0 \rightarrow F \geq p-x \rightarrow p-x \leq F \rightarrow -F \leq p-x \leq F$ $-4 \leq -x \leq 2 \rightarrow [4 \geq x \geq -2]$ $D_F = [-2, 4]$	۵

$1 - |u| \geq 0 \rightarrow \begin{cases} u \geq 0 \rightarrow 1 - u^p \geq 0 \rightarrow 1 \geq u^p \rightarrow u^p \leq 1 \rightarrow -1 \leq u \leq 1 \xrightarrow{u \geq 0} [0, 1] \\ u < 0 \rightarrow 1 + u^p \geq 0 \rightarrow u^p \geq -1 \rightarrow |u| \leq 1 \rightarrow [-1, 0] \end{cases} \xrightarrow{\text{union}} [-1, 1] = D_f$

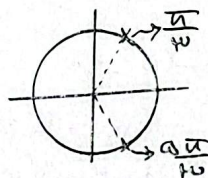
ب) $\mu - |u - \omega| \geq 0 \rightarrow \mu \geq |u - \omega| \rightarrow |u - \omega| \leq \mu$
 $\mu - |u - \omega| \neq 1 \rightarrow |u - \omega| = \mu \quad -\mu \leq u - \omega \leq \mu \rightarrow \mu \leq u \leq 1$
 $\begin{cases} u - \omega = \mu \rightarrow u \neq \nu \\ u - \omega = -\mu \rightarrow u \neq \mu \end{cases} \quad [D_f = [0, \mu) \cup (\mu, \nu) \cup (\nu, 1)]$

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ج) $\cos u \neq 1 \quad \frac{\pi}{p}$  $[D_f = R - \{K\pi + \frac{\pi}{p}, K\pi + \frac{p\pi}{p}\}]$

ب) $\mu \cos u - 1 = 0 \rightarrow \mu \cos u = 1 \rightarrow \cos u = \frac{1}{\mu}$

$D_f = R - \{K\pi + \frac{\pi}{\mu}, K\pi + \frac{2\pi}{\mu}\}$

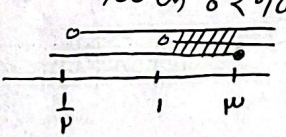


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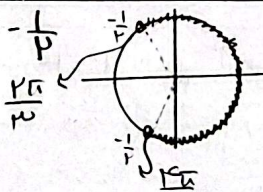
ج) $|u+1| - |u+\mu| = 0 \rightarrow |u+1| = |u+\mu| \rightarrow \begin{cases} u+1 = u+\mu \rightarrow \mu = 1 \\ u+1 = -u-\mu \rightarrow \mu = -1 \end{cases} \rightarrow [D_f = R - \{1, -1\}]$

ب) $|u+1| - |u+\mu| \geq 0 \rightarrow |u+1| \geq |u+\mu| \rightarrow (u+1)^2 \geq (u+\mu)^2$
 $\mu^2 + 1 + 2u \geq u^2 + \mu^2 + 2\mu u \rightarrow 1 - \mu^2 \geq 2u(\mu - 1) \rightarrow (1 - \mu)(1 + \mu) \geq 2u(\mu - 1)$
 $\mu(\mu - 1) \geq 0 \rightarrow \begin{cases} \mu \geq 1 \rightarrow u \leq -\frac{\mu-1}{\mu} \\ \mu < 1 \rightarrow u \geq -\frac{\mu-1}{\mu} \end{cases} \rightarrow [D_f = (-\infty, -\frac{\mu-1}{\mu}] \cup [\frac{\mu-1}{\mu}, +\infty)$

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$\log_{\omega} \log_{\omega}^{(\mu-1)} \geq 0 \rightarrow \begin{cases} \mu-1 \geq 0 \rightarrow \mu \geq 1 \rightarrow [x \geq \frac{1}{\mu}] \\ \log_{\omega} \mu-1 \geq 0 \rightarrow \mu-1 \geq 1 \rightarrow \mu \geq 2 \rightarrow [x \geq 1] \\ \log_{\omega} \mu-1 \leq 0 \rightarrow \log_{\omega} \mu-1 \leq 1 \rightarrow \mu-1 \leq \omega \rightarrow \mu \leq 1+\omega \rightarrow [x \leq \mu] \end{cases}$
 $\omega \in (0, 1)$  $[D_f = (1, \mu)]$

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ج) $\mu \cos u + 1 \geq 0 \rightarrow \mu \cos u \geq -1 \rightarrow \cos u \geq -\frac{1}{\mu}$  $D_f = (K\pi - \frac{\pi}{\mu}, K\pi + \frac{\pi}{\mu})$

ب) $\log_{10} \frac{x-1}{x+1} \geq 0 \Rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} - 1 \geq 0 \rightarrow \frac{x-1-x-1}{x+1} \geq 0 \rightarrow \frac{-2}{x+1} \geq 0 \rightarrow x+1 \leq -1 \rightarrow x \leq -2$
 $[D_f = (-\infty, -1)]$

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