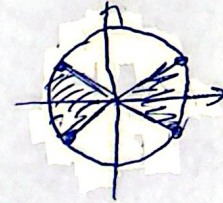
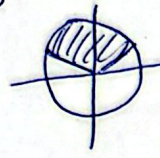


الف) $2n^3 + 3n^2 - 1n + 3 \mid n-1$ $R = \{-3, 1, \frac{1}{2}\}$ $\downarrow$ $b^2 - 4ac = 9 - 4(1)(3) = -5$ $\frac{-a \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-1 \pm \sqrt{-5}}{2}$ $\boxed{1} \quad \boxed{\frac{1}{2}}$	ب) $2n^3 + 9n^2 + 14n + 3 \mid n+1$ $\downarrow$ $19 - 4(1)(3) = 7$ $\frac{-a \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-1 \pm \sqrt{7}}{2}$ $\boxed{R = \{-3, -\frac{1}{2}, -1\}}$ $\boxed{\frac{1}{2}}$ $\boxed{\frac{1}{2}}$
الف) $n^3 - 2n^2 + 2n - 1 \mid n-1$ $n^2 - n + 1 \rightarrow \Delta < 0$ این ریشه ندارد $1 - f(1)(1) = -2$ $\Delta < 0$ $\boxed{D = R - \{1\}}$	ب) $\frac{n+3}{n^3 - 2n^2 + 2n - 1} \mid \frac{n+3}{n-1}$ $\downarrow$ $\frac{n+3}{(n-1)(n^2 - n + 1)}$ مقسوم $\boxed{D = (-\infty, 3] \cup (1, +\infty)}$
$n^2 - \omega \mid n-1 \mid -2n + \omega \neq 0$ $n^2 - \omega(n-1) - 2n + \omega =$ اگر $n \nmid 1$ $n^2 - \omega n + \omega - 2n + \omega = n^2 - (\omega+2)n + 2\omega = (n-2)(n-\omega) \rightarrow n \neq 2, \omega$ اگر $n \nmid 1$ $n^2 - \omega(1-n) - 2n + \omega = n^2 + 3n = n(n+3) \rightarrow n \neq 0, -3$ $\boxed{D = R - \{-3, 0, 2, \omega\}}$	
الف) $\sqrt{2-n} \mid 2$ $[-n] - 2 \nmid 0$ $[-n] \nmid 2$ $\boxed{D = (-\infty, -2]}$	ب) $[n]^2 - 2[n] - 3 \neq 0 \rightarrow [n] = t$ $t^2 - 2t - 3 \neq 0 \quad [n] - 3 \rightarrow 3 \leq n < 4$ $(t+3)(t-1) \rightarrow [n] = -1 \rightarrow -1 \leq n < 0$ $t = 3, -1 \quad \boxed{D = R - ([-1, 0) \cup [3, 4])}$
الف) $[n - \frac{1}{3}] + [n + \frac{2}{3}] \nmid 0$ $[n - \frac{1}{3} + 1 - 1] + [n + \frac{2}{3}] \nmid 0$ $n + \frac{2}{3} \nmid 1$ $[n + \frac{2}{3}] - 1 + [n + \frac{2}{3}] \nmid 0$ $n \nmid \frac{1}{3}$ $2[n + \frac{2}{3}] \nmid 1$ $[\frac{1}{3}, +\infty)$ $[n + \frac{2}{3}] \nmid \frac{1}{3}$ $[n + \frac{2}{3}] \nmid 1$	ب) $[n - \frac{1}{3}] + [\frac{1}{3} - n] \nmid 0$ $[y] + [-y] \nmid 0 \rightarrow y \in \mathbb{Z}$ $n - \frac{1}{3} \in \mathbb{Z}$ $n \in \mathbb{Z} + \frac{1}{3}$ $\boxed{D = \{n \mid n \in k + \frac{1}{3}, k \in \mathbb{Z}\}}$

الف) $\frac{\cot u + 1}{\tan u + 1} =$  $\tan u + 1 \neq 0 \Rightarrow \tan u \neq -1$ $\cot = \frac{\cos}{\sin} \rightarrow \sin \neq 0$ $\tan = \frac{\sin}{\cos} \rightarrow \cos \neq 0$ $D_f = R - \left\{ \frac{k\pi}{4}, k\pi - \frac{\pi}{4} \right\}$	ب) $1 - f \sin^2 m \geq 0$ $f \sin^2 m \leq 1$ $\sin^2 m \leq \frac{1}{f}$ $-\frac{1}{\sqrt{f}} \leq \sin m \leq \frac{1}{\sqrt{f}}$  $D_f = \left\{ k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right\}$	6
الف) $r \sin u - 1 \geq 0$ $r \sin u \geq 1$ $\sin u \geq \frac{1}{r}$  $D_f = \left[r\pi + \frac{\pi}{6}, r\pi + \frac{5\pi}{6} \right]$	ب) $1 - r \cos u \geq 0$ $1 \geq r \cos u$ $\cos u \leq \frac{1}{r}$ $D_f = \left\{ r\pi + \frac{\pi}{3}, r\pi + \frac{2\pi}{3} \right\}$	7
الف) $-1 \leq u^2 + r u + 1 \leq 1$ $u^2 + r u + 1 \geq -1$ $u^2 + r u + 2 \geq 0$ $(u+r)(u+2) \geq 0$ $u \leq -r \text{ or } u \geq -2$ $u^2 + r u + 1 \leq 1$ $u^2 + r u \leq 0$ $u(u+r) \leq 0$ $-r \leq u \leq 0$ $D = [-r, -2] \cup [-1, 0]$	ب) $0 \leq \sqrt{a - r u} \leq 1$ $0 \leq a - r u \leq 1$ $a - r u \geq 0$ $u \leq \frac{a}{r}$ $a - r u \leq 1$ $u \geq \frac{a-1}{r}$ $D = \left[\frac{a-1}{r}, \frac{a}{r} \right]$	8
الف) $\log_p (1 - \log_p^m)$ $m \geq 0$ $1 - \log_p^m \geq 0$ $\log_p^m \leq 1 \rightarrow m \leq p$ $D = (0, p)$	ب) $\log_p (1 - \log_p^m)$ $m \geq 0$ $1 - \log_p^m \geq 0$ $\log_p^m \leq 1$ $m \leq \frac{1}{p}$ $D = \left(\frac{1}{p}, +\infty \right)$	9
الف) $\frac{f u - m^2}{p} - 1 \geq 0$ $f u - m^2 \geq p$ $f u - m^2 \geq p$ $f u - m^2 - p \geq 0$ $(u-1)(u-3) \leq 0$ $1 \leq u \leq 3$ $D = [1, 3]$	ب) $\frac{p u + \omega}{p u + f} \in W \rightarrow u = -\frac{f u - \omega}{p u - p}$ $D = \left\{ u \mid u = \frac{-f u + \omega}{p u - p}, k \in W \right\}$ $\frac{-f u + \omega}{p u - p}$	10