

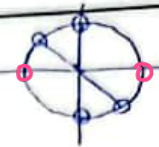
۱۷/۵
 اصل های که نوشته بار دقت مطالعه شود. جزوه بنظر من بار دقت خوانده شود
 الف) $2n^3 + 3n^2 - 11n + 3 \mid n-1$
 جمع ضرایب = ۰
 بر $n-1$ بخش پذیر است.
 $D_f = \mathbb{R} - \{1/2, 3\}$
 $x^2 + 5x - 6 = (x+6)(x-1)$
 $x = -6, -1/2$

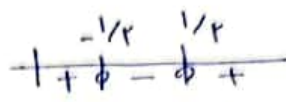
ب) $2n^3 + 9n^2 + 10n + 3 \mid n+1$
 جمع ضرایب = ۰
 بخش پذیر بر $n+1$
 $2n^3 + 9n^2 + 10n + 3 = (2n+1)(n+3)$
 $D_f = \mathbb{R} - \{1/2, -1/2\}$
 الف) $x^3 - 2n^2 + 2n - 1 \neq 0 \rightarrow x^3 - 2n^2 + 2n - 1 \mid n-1$
 $x^2 - n + 1$
 $(n-1)(n^2 - n + 1) \neq 0$
 $n+1 \rightarrow D_f = \mathbb{R} - \{1\}$
 ب) $\frac{n+3}{(n-1)(n^2-n+1)} \geq 0$
 علامت گذاری: $n+3, n-1, n^2-n+1$
 $D_f = (-\infty, -3] \cup (1, +\infty)$

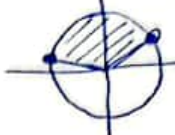
۱۷/۵
 $n \geq 1 \rightarrow n^2 - 5n + 10 \rightarrow (n-2)(n-3) \rightarrow n \neq 2, 3$
 $n < 1 \rightarrow n^2 + 3n \rightarrow n(n+3) \rightarrow n \neq 3$
 $D_f = \mathbb{R} - \{2, 3, 0\}$

الف) $[-n] - 2 \geq 0 \rightarrow [-n] \geq 2 \rightarrow -n = [2, +\infty) \rightarrow n = (-\infty, -2]$
 $D_f = (-\infty, -2]$
 ب) $[n] = 0 \rightarrow t^2 - 2t - 3 \rightarrow (t-3)(t+1) \neq 0 \rightarrow t \neq 3, -1$
 $[n] \neq 3, [n] \neq -1 \rightarrow D_f = \mathbb{R} - (-1, 0) \cup [3, 4)$

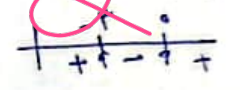
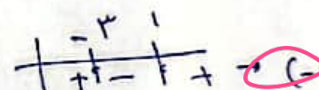
الف) $[n-1/2] + [n+1/2] - 1 + 1 \rightarrow 2[n-1/2] + 1 \geq 0 \rightarrow [n-1/2] \geq -1/2$
 $n-1/2 \geq -1/2 \rightarrow n \geq 0$
 $D_f = [0, +\infty)$
 ب) $\sqrt{[m] + [-m]} \rightarrow [m] + [-m] \geq 0$
 $[m-1/2] = [m]$
 $n-1/2 \in \mathbb{Z} \rightarrow n \in \mathbb{Z} + 1/2$
 $D_f = \{n \mid n = k + 1/2, k \in \mathbb{Z}\}$

الف) $\tan \theta \neq 0 \rightarrow \tan \theta \neq -1$, $\cos \theta \neq 0$  $\Rightarrow D_f = \mathbb{R} - [K\pi + \pi/4] \cup [K\pi - \pi/4, K\pi + \pi/4]$ Cobn هم باید تقریبی شود $n \neq Kn$

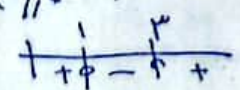
ب) $(1 - \sin \theta)(1 + \sin \theta) \neq 0$   $D_f = \mathbb{R} - (K\pi - \pi/4, K\pi + \pi/4)$ LVA

الف) $\sin \theta \neq 1$ $\rightarrow \sin \theta \neq 1/2$  $D_f = [K\pi + \pi/4, K\pi + 5\pi/4]$ P

ب) $1 - \cos \theta \neq 0$ $1/2 \neq \cos \theta$  $D_f = \mathbb{R} - (K\pi - \pi/4, K\pi + \pi/4)$

الف) $-1 \leq n^2 + 3n + 1 \leq 1 \rightarrow n^2 + 3n \leq 0 \rightarrow n(n+3) \leq 0$  P
ب؟ لاصل ترتیب کامل معضی ب
 $D_f = [-3]$ P
 $0 \leq n^2 + 3n + 2 \rightarrow (n+2)(n+1) \geq 0$  P

الف) $1 - \log_3 n > 0$ $1 > \log_3 n \rightarrow \log_3^{-n} > -1$ P
 $\log_3^{1/n} > -1 \rightarrow b > 1 \rightarrow 1/n > 1/4 \rightarrow n/4 > 1 \rightarrow .5n < 4$
 $D_f = (0, 8)$
 ب) $\log_3 n < 1$ مضی $\log_3^{-n} > -1 \rightarrow 1/n < 2 \rightarrow n > 1/2$
 $D_f = (1/2, +\infty)$

الف) $r^{Fn-n^2} - 1 > 0 \rightarrow r^{Fn-n^2} > 1 \rightarrow Fn-n^2 > 4$  $\Leftrightarrow n^2 - Fn + 4 \leq 0 \rightarrow (n-1)(n-3) \leq 0$
 $D_f = [1, 3]$

ب) $\frac{r_n + \delta}{r_n + \epsilon} \in \mathbb{W} \Rightarrow n = -\frac{r_n - \delta}{r_n - \epsilon} \rightarrow n = \frac{-r_n + \delta}{r_n - \epsilon}$ P

$D_f = \left\{ n \mid n = \frac{-r_n + \delta}{r_n - \epsilon}, n \in \mathbb{W} \right\}$

۳- کس عبارت مفرج را دستکاری میکنیم تا ک ساده تر شود...

$$(x^2 - 2x + 1) - 5|x-1| + 4 \rightarrow (x-1)^2 - 5|x-1| + 4 \xrightarrow{|x-1|=t} t^2 - 5t + 4$$

$$(t-1)(t-4) = 0 \rightarrow t=1, t=4$$

$$|x-1|=1 \rightarrow x=2 \text{ و } 0 \quad |x-1|=4 \rightarrow x=5, -3 \rightarrow Df = \mathbb{R} - \{-3, 0, 2, 5\}$$

$$5- \text{الف)} \lfloor x - \frac{1}{x} \rfloor + \lfloor x + \frac{2}{x} \rfloor \geq 0 \xrightarrow{+1} \lfloor x - \frac{1}{x} \rfloor + 1 + \lfloor x + \frac{2}{x} \rfloor \geq 1$$

$$\lfloor x + \frac{2}{x} \rfloor + \lfloor x + \frac{2}{x} \rfloor \geq 1 \rightarrow \lfloor x + \frac{2}{x} \rfloor \geq \frac{1}{2} \xrightarrow{\text{اولین عدد صحیح بزرگتر از } \frac{1}{2} \text{ برابر یک است!}} x + \frac{2}{x} \geq 1$$

$$x \geq \frac{1}{x} \rightarrow Df = [\frac{1}{x} + \infty)$$

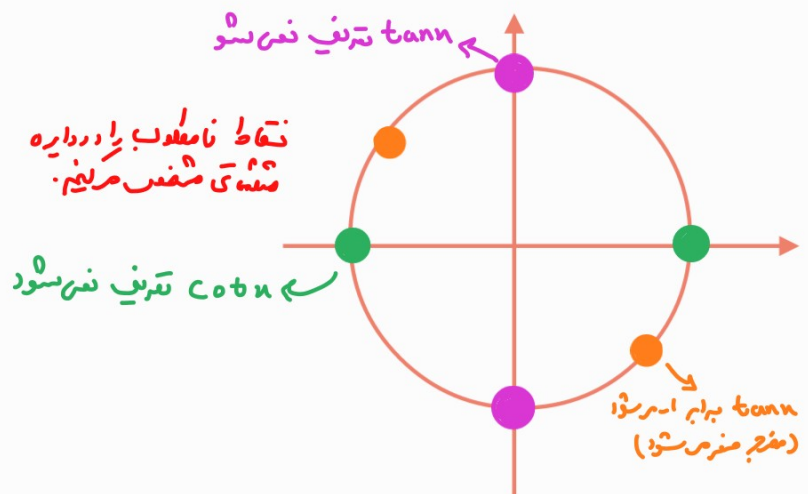
$$4- \text{الف)} y = \frac{\cot x + 1}{\tan x + 1}$$

$$x \neq k\pi + \frac{\pi}{2}$$

$$x \neq k\pi + \frac{\pi}{2} \cup x \neq k\pi$$

$$\rightarrow x \neq \frac{k\pi}{2}$$

$$\rightarrow Df = \mathbb{R} - \left\{ \frac{k\pi}{2}, k\pi + \frac{\pi}{2} \right\}$$



$$8- \text{الف)} -1 \leq x^2 + 3x + 1 \leq 1 \xrightarrow{\frac{9}{4} - \frac{25}{4}} -1 \leq x^2 + 3x + \frac{9}{4} - \frac{25}{4} \leq 1$$

$$\frac{1}{2} \leq x^2 + 3x + \frac{9}{4} \leq \frac{9}{4} \rightarrow \frac{1}{2} \leq (x + \frac{3}{2})^2 \leq \frac{9}{4}$$

$$\begin{cases} (x + \frac{3}{2})^2 \leq \frac{9}{4} \rightarrow -\frac{3}{2} \leq x + \frac{3}{2} \leq \frac{3}{2} \rightarrow -3 \leq x \leq 0 \quad I \\ (x + \frac{3}{2})^2 \geq \frac{1}{2} \rightarrow x + \frac{3}{2} \geq \frac{1}{2} \rightarrow x \geq -1 \quad \cup \quad x + \frac{3}{2} \leq -\frac{1}{2} \rightarrow x \leq -2 \quad II \end{cases}$$

$$I \cap II \rightarrow Df = [-3, -2] \cup [-1, 0]$$

$$\text{ج- ۱} \quad \sqrt{\omega - 2n} \rightarrow \omega - 2n \geq 0 \rightarrow n \leq \frac{\omega}{2}$$

$$\rightarrow Df \in \left[2, \frac{\omega}{2} \right]$$

$$\underbrace{-1 \leq \sqrt{\omega - 2n} \leq 1}_{\text{همواره برقرار است}} \rightarrow \omega - 2n \leq 1 \rightarrow -2n \leq -\omega + 1 \rightarrow n \geq 2$$

همواره برقرار است ✓