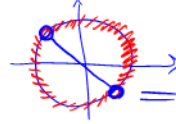
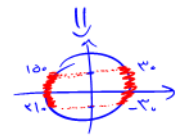
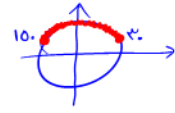
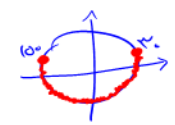


الف) $y = \frac{\cot x + 1}{\tan x + 1}$ $\tan x + 1 \neq 0 \Rightarrow \tan x \neq -1$  $\Rightarrow D_f = \mathbb{R} - \{\frac{3}{4}\pi + k\pi\}$ $\hookrightarrow n \neq \frac{k\pi}{4}$ ب) $y = \sqrt{1 - 4 \sin^2 x}$ $1 - 4 \sin^2 x \geq 0 \Rightarrow -1 \geq 4 \sin^2 x \Rightarrow -\frac{1}{4} \geq \sin^2 x \Rightarrow \sin^2 x \leq \frac{1}{4}$ $\frac{1}{4} \geq \sin^2 x \geq -\frac{1}{4}$ $D_f = [k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2}]$ 	٦
الف) $y = \sqrt{2 \sin x - 1}$ $2 \sin x - 1 \geq 0 \Rightarrow \sin x \geq \frac{1}{2}$  $D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$ ب) $y = \sqrt{1 - 2 \cos x}$ $1 - 2 \cos x \geq 0 \Rightarrow \cos x \leq \frac{1}{2}$  صورت سوال را با دقت ببینید و بعد از آن $D_f = [2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3}]$ راه حل ناممکن	٧
الف) $y = \arcsin(x^2 + 3x + 1)$ $-1 \leq x^2 + 3x + 1 \leq 1 \Rightarrow -2 \leq x^2 + 3x \leq 0$ $x^2 + 3x \leq 0 \Rightarrow x(x+3) \leq 0$ $x \in [-3, 0]$ $-2 \leq x^2 + 3x \Rightarrow 0 \leq x^2 + 3x + 2 \Rightarrow 0 \leq (x+1)(x+2) \Rightarrow x \in (-\infty, -2] \cup [-1, +\infty)$ ب) $\cos y = \sqrt{5 - 2x}$ $0 - 2x \geq 0 \Rightarrow 0 \geq 2x \Rightarrow 0 \geq x$ $-\frac{1}{\sqrt{5-2x}} \leq 1 \Rightarrow 0 - 2x \leq 1 \Rightarrow -2x \leq 1 \Rightarrow x \geq -\frac{1}{2}$ $\Rightarrow D_f = [-\frac{1}{2}, 0]$	٨
الف) $y = \log_{\frac{1}{2}}(1 - \log_{\frac{1}{2}} x)$ $1 - \log_{\frac{1}{2}} x > 0 \Rightarrow 1 > \log_{\frac{1}{2}} x \Rightarrow x < 2$ $x > 0$ $\Rightarrow D_f = (0, 2)$ ب) $y = \log_{\frac{1}{2}} \frac{(1 - \log_{\frac{1}{2}} x)}{x}$ $1 - \log_{\frac{1}{2}} x > 0 \Rightarrow 1 > \log_{\frac{1}{2}} x \Rightarrow x < 2$ $x > 0$ $\Rightarrow D_f = (0, 2)$	٩
الف) $y = \sqrt{2^{4x-x^2} - 1}$ $2^{4x-x^2} - 1 \geq 0 \Rightarrow 2^{4x-x^2} \geq 1 \Rightarrow 4x - x^2 \geq 0 \Rightarrow x^2 - 4x \leq 0 \Rightarrow x(x-4) \leq 0 \Rightarrow x \in [0, 4]$ ب) $y = \left(\frac{3x+5}{2x+4}\right)!$ $\frac{3x+5}{2x+4} \in \mathbb{W}$ $k = \frac{3x+5}{2x+4} \Rightarrow x = -\frac{k-5}{k-3}$ $D_f = \{x \mid x = -\frac{k-5}{k-3}, k \in \mathbb{W}\}$	١٠

الف - ۴) $[-n] - 2 \geq 0 \rightarrow [-n] \geq 2 \rightarrow -n \geq 2 \rightarrow n \leq -2 \rightarrow D_f = (-\infty, -2]$

الف - ۵) $[n - \frac{1}{n}] + [n + \frac{2}{n}] \geq 0 \xrightarrow{+1} [n - \frac{1}{n}] + 1 + [n + \frac{2}{n}] \geq 1$
 $[n + \frac{2}{n}] + [n + \frac{2}{n}] \geq 1 \rightarrow [n + \frac{2}{n}] \geq \frac{1}{2}$ اولین عدد صحیح بعد از $\frac{1}{2}$ برابر یک است! $n + \frac{2}{n} \geq 1$
 $n \geq \frac{1}{n} \rightarrow D_f = [\frac{1}{n}, +\infty)$

الف - ۹) $y = \frac{\cot n + 1}{\tan n + 1} \rightarrow$ نقاط نامطلوب را در دایره مشخص می‌کنیم.

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

$n \neq k\pi + \frac{\pi}{4} \cup n \neq k\pi$

$\hookrightarrow n \neq \frac{k\pi}{4} \rightarrow D_f = \mathbb{R} - \{ \frac{k\pi}{4}, k\pi + \frac{\pi}{4} \}$

ب - ۷) $1 - 2 \cos n \geq 0 \rightarrow \cos n \leq \frac{1}{2}$

$\rightarrow D_f = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$

ب - ۹) $y = \log_2 (1 - \log_2 \frac{n}{4}) \rightarrow \log_2 \frac{n}{4} \rightarrow n > 0$
 $\hookrightarrow 1 - \log_2 \frac{n}{4} > 0 \rightarrow \log_2 \frac{n}{4} < 1$ مناسب (۱ و ۰) $\rightarrow n > \frac{1}{4}$
 $D_f = (\frac{1}{4}, +\infty)$