

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۳ کلاس: یازدهم ریاضی A	
الف) $2x^3 + 3x^2 - 12x + 3 \mid x-1 \rightarrow (2x-1)(x+3)(x-1) \rightarrow D = \mathbb{R} - \{1, -3, \frac{1}{2}\}$ ب) $2x^3 + 9x^2 + 10x + 3 \mid x+1 \rightarrow (2x+1)(x+1)(x+3) \rightarrow D = \mathbb{R} - \{-3, -1, -\frac{1}{2}\}$	۱
الف) $y = \frac{x+3}{x^2-2x+2x-1} = \frac{x+3}{(x-1)(x^2-2x+1)} \rightarrow D = \mathbb{R} - \{1\}$ ب) $\frac{x+3}{x^2-2x+2x-1} \rightarrow \frac{-3}{+6-6+}$ $\rightarrow D = (-\infty, -3] \cup (1, +\infty)$	۲
$y = \frac{2}{x^2-5 x-1 -2x+5} \rightarrow x^2-5 x-1 -2x+5 \neq 0$ $x \geq 1 \rightarrow x^2-5x+5-2x+5 = x^2-7x+10 = (x-2)(x-5) \rightarrow x=2, x=5$ $x < 1 \rightarrow x^2-5(-x+1)-2x+5 = x^2+3x-5+5 = x^2+3x = x(x+3) \rightarrow x=0, x=-3$ $D_f = \mathbb{R} - \{-3, 0, 2, 5\}$	۳
الف) $y = \sqrt{[-x]-2} \rightarrow [-x]-2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow -x \geq 2 \rightarrow x \leq -2 \rightarrow D = (-\infty, -2]$ ب) $y = \frac{5x^2+4}{[x]^2-2[x]-3} \rightarrow [x]^2-2[x]-3 \neq 0 \rightarrow ([x]-3)([x]+1) \neq 0$ $[x] \neq 3, [x] \neq -1 \rightarrow -1 < x < 0$ $D = (-\infty, -1) \cup [3, +\infty)$ حذف $3 \leq x < 4 \rightarrow$ حذف	۴
الف) $y = \sqrt{[x-\frac{1}{3}]} + [x+\frac{2}{3}] \rightarrow [x-\frac{1}{3}] + [x+\frac{2}{3}] \geq 0 \rightarrow 2[x-\frac{1}{3}] + 1 \geq 0 \rightarrow [x-\frac{1}{3}] \geq -\frac{1}{2}$ $D = [\frac{1}{3}, +\infty)$ ب) $y = \sqrt{[x-\frac{1}{3}]} + [\frac{1}{3}-x] \rightarrow [x-\frac{1}{3}] + [\frac{1}{3}-x] \geq 0$ $x = \frac{1}{3} + k \rightarrow k \in \mathbb{Z}$ $D = \{\frac{1}{3} + k, k \in \mathbb{Z}\}$ این تابع در اعداد صحیح برابر با صفر است.	۵

$$\text{الف) } y = \frac{\cot x + 1}{\tan x + 1} \rightarrow \begin{cases} \sin x \neq 0 \\ \cos x \neq 0 \end{cases} \rightarrow \tan x + 1 \neq 0 \rightarrow \tan x \neq -1 \quad D = \mathbb{R} - \left\{ k\pi, \frac{\pi}{4} + k\pi, k\pi + \frac{3\pi}{4} \right\} \quad k \in \mathbb{Z}$$

$$\text{ب) } y = \sqrt{1 - 4\sin^2 x} \rightarrow 1 - 4\sin^2 x \geq 0 \rightarrow \sin^2 x \leq \frac{1}{4} \rightarrow |\sin x| \leq \frac{1}{4} \rightarrow -\frac{\pi}{6} \leq x \leq \frac{\pi}{6}$$

$$D = \left[k\pi - \frac{\pi}{6}, k\pi + \frac{\pi}{6} \right] \quad \text{آزمایش باید از سر بازه بزرگ تر باشد}$$

$$\text{الف) } y = \sqrt{2\sin x - 1} \rightarrow 2\sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{2}$$

$$D = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$$

$$\text{ب) } y = \sqrt{1 - 2\cos x} \rightarrow 1 - 2\cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2}$$

$$D = \left[2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3} \right]$$

$$\text{الف) } y = \arcsin(x^2 + 3x + 1) \rightarrow -1 \leq x^2 + 3x + 1 \leq 1 \rightarrow \begin{cases} x^2 + 3x + 1 \geq -1 \rightarrow (x+1)(x+2) \geq 0 \\ x^2 + 3x + 1 \leq 1 \rightarrow x^2 + 3x \leq 0 \rightarrow x(x+3) \leq 0 \end{cases}$$

$$I \cap II \Rightarrow D = [-2, -1] \cup [-1, 0] \rightarrow \begin{cases} x^2 + 3x + 1 \leq 1 \rightarrow x^2 + 3x \leq 0 \rightarrow x(x+3) \leq 0 \\ \rightarrow -3 \leq x \leq 0 \end{cases}$$

$$\text{ب) } \cos y = \sqrt{5 - 2x} \rightarrow -1 \leq \sqrt{5 - 2x} \leq 1 \rightarrow 0 \leq 5 - 2x \leq 1 \rightarrow \begin{cases} 5 - 2x \geq 0 \rightarrow x \leq \frac{5}{2} \\ 5 - 2x \leq 1 \rightarrow x \geq 2 \end{cases}$$

$$I \cap II \rightarrow D = \left[2, \frac{5}{2} \right]$$

$$\text{الف) } y = \log_2 \left(\frac{1 + \log_3 x}{x} \right) \rightarrow \begin{cases} x > 0 \\ 1 - \log_3 x > 0 \rightarrow \log_3 x < 1 \rightarrow x < 3 \end{cases} \rightarrow x > 0, x < 3 \rightarrow D = (0, 3)$$

$$\text{ب) } y = \log_2 \left(1 - \log_2 \frac{x}{x+1} \right) \rightarrow \begin{cases} x > 0 \\ 1 - \log_2 \frac{x}{x+1} > 0 \rightarrow \log_2 \frac{x}{x+1} < 1 \rightarrow x > \frac{1}{3} \end{cases} \rightarrow x > \frac{1}{3}$$

$$I \cap II \rightarrow D = \left(\frac{1}{3}, +\infty \right)$$

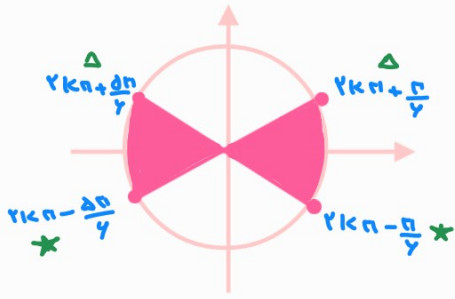
$$\text{الف) } y = \sqrt{2^{4x-x^2} - 1} \rightarrow 2^{4x-x^2} - 1 \geq 0 \rightarrow 2^{4x-x^2} \geq 1 \rightarrow 4x - x^2 \geq 0 \rightarrow -x^2 + 4x - 0 \geq 0$$

$$x^2 - 4x + 0 \leq 0 \rightarrow (x-1)(x-3) \leq 0 \rightarrow \frac{1}{1-1} \rightarrow D = [1, 3]$$

$$\text{ب) } y = \left(\frac{3x+5}{2x+4} \right)! \rightarrow \frac{3x+5}{2x+4} \in \mathbb{W} \rightarrow 3x+5 = W(2x+4) \rightarrow x = \frac{4W-5}{3-2W}$$

$$2x+4 \neq 0 \rightarrow x \neq -2 \quad D = \left\{ \frac{4k-5}{3-2k} \mid k \in \mathbb{W} \right\}$$

$$4- \text{ب) } 1 - r \sin^2 n \geq 0 \rightarrow r \sin^2 n \leq 1 \rightarrow \sin^2 n \leq \frac{1}{r} \rightarrow -\frac{1}{\sqrt{r}} \leq \sin n \leq \frac{1}{\sqrt{r}}$$



$$\rightarrow D_f = \left[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right]$$