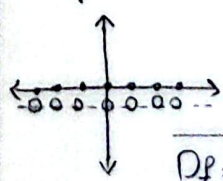
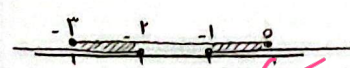
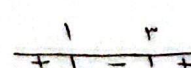


نام و نام خانوادگی ... آریسا علیاری ... پاسخنامه تشریحی تکلیف شماره ۳ ... کلاس یازدهم، دختر ...

۱۹، ۵

۱ $y = \frac{x+3}{2x^3+3x^2-11x+3}$ $2x^3+3x^2-11x+3 \neq 0$ $(x-1)(2x^2+5x-3) \neq 0 \rightarrow \frac{(x+4)(x-1)}{2}$ $(x-1)(x^2+5x-4) \neq 0 \rightarrow \frac{(x+4)(x-1)}{2}$ $D_f = \mathbb{R} - \left\{1, -\frac{1}{5}\right\}$ الف)	۱ $y = \frac{x+3}{2x^3+9x^2+11x+3}$ $2x^3+9x^2+11x+3 \neq 0$ $(x+1)(2x^2+7x+3) \neq 0$ $(x+1)(x^2+6x+4) \neq 0 \rightarrow \frac{(x+1)(x+4)}{2}$ $(x+1)(x^2+6x+4) \neq 0 \rightarrow \frac{(x+1)(x+4)}{2}$ $D_f = \mathbb{R} - \left\{-1, -\frac{1}{2}, -3\right\}$ ب)
۲ $y = \frac{x+3}{x^3-2x^2+2x-1}$ $x^3-2x^2+2x-1 \neq 0$ $(x-1)(x^2-x+1) \neq 0$ $D_f = \mathbb{R} - \{1\}$ الف)	۲ $y = \sqrt{\frac{x+3}{x^3-2x^2+2x-1}} \cdot \frac{x+3}{x^3-2x^2+2x-1} \geq 0$ $\frac{x+3}{(x-1)(x^2-x+1)} \cdot \frac{-3}{x^2-x+1}$ $D_f = (-\infty, -3] \cup (1, +\infty)$ ب)
۳ $y = \frac{2}{x^2-\omega x-1 -2x+\omega}$ $x^2-\omega x-1 -2x+\omega \neq 0$ $x^2-\omega x+\omega-2x+\omega \neq 0 \rightarrow x^2-7x+2\omega \neq 0 \rightarrow (x-2)(x-\omega) \neq 0 \rightarrow x \neq 2, \omega$ $x^2+\omega x-\omega-2x+\omega \neq 0 \rightarrow x^2+3x \neq 0 \rightarrow x(x+3) \neq 0 \rightarrow x \neq 0, -3$ $D_f = \mathbb{R} - \{2, \omega, 0, -3\}$ الف)	۳
۴ $y = \sqrt{[x]-2} \rightarrow [x] \geq 2$ $D_f = (-\infty, -2]$ الف)	۴ $y = \frac{\omega x^2+4}{[x]^2-2[x]-3} \quad ([x]-3)([x]+1)$ $[x]+1 \neq 0 \rightarrow [x] \neq -1 \rightarrow x \neq [-1, 0)$ $[x]-3 \neq 0 \rightarrow [x] \neq 3 \rightarrow x \neq [3, 4)$ $D_f = (-\infty, -1) \cup [0, 3) \cup [4, +\infty)$ ب)
۵ $y = \sqrt{[x-\frac{1}{k}] + [x+\frac{k}{k}]}$ $[x-\frac{1}{k}] + [x+\frac{k}{k}] + 1 \geq 0$ $2[x-\frac{1}{k}] \geq -1 \rightarrow [x-\frac{1}{k}] \geq -\frac{1}{2}$ $x-\frac{1}{k} \geq [-\frac{1}{2}] \rightarrow x-\frac{1}{k} \geq -\frac{1}{2} \rightarrow x \geq \frac{1}{k} - \frac{1}{2}$ $D_f = [\frac{1}{k} - \frac{1}{2}, +\infty)$ الف)	۵ $y = \sqrt{[x-\frac{1}{k}] + [\frac{1}{k}-x]} \rightarrow [x] + [-x]$  $x - \frac{1}{k} \in \mathbb{Z}$ $x \in \mathbb{Z} + \frac{1}{k}$ $D_f = \left\{x \mid x = k + \frac{1}{k}, k \in \mathbb{Z}\right\}$ ب)

$y = \frac{\cot x + 1}{\tan x + 1} \quad \cos, \sin \neq 0$ $\tan \neq -1 \rightarrow 1 \neq \sin, \cos$ $D_f = \mathbb{R} - \left\{ \frac{k\pi}{4}, k\pi - \frac{\pi}{4} \right\}$	$y = \sqrt{1 - \sin^2 x} \quad \sin^2 x \leq 1$ $\sin^2 x \leq \frac{1}{4}$ $-\frac{1}{2} \leq \sin x \leq \frac{1}{2}$ $D_f = \left[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right]$
الف) $y = \sqrt{2 \sin x - 1} \quad 2 \sin x \geq 1 \rightarrow \sin x \geq \frac{1}{2}$ $D_f = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$	ب) $y = \sqrt{1 - 2 \cos x} \quad 2 \cos x \leq 1$ $\cos x \leq \frac{1}{2}$ $D_f = \mathbb{R} - \left[2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3} \right]$
الف) $y = \arcsin(x^2 + 3x + 1)$ $x^2 + 3x + 1 \leq 1 \rightarrow x^2 + 3x \leq 0$ $x^2 + 3x + 1 \geq -1 \rightarrow x^2 + 3x + 2 \geq 0$  $D_f = [-3, 0] \cup [-1, 0]$	ب) $\cos y = \sqrt{2 - 2x} \quad \forall x \leq 2 \rightarrow x \leq 2$ $2 - 2x \leq 1 \rightarrow 2x \geq 1 \rightarrow x \geq \frac{1}{2}$ $D_f = \left[\frac{1}{2}, 2 \right]$ الف) $x = 2 \rightarrow \log \frac{2}{1} = 0$ ب) $x = \frac{1}{2} \rightarrow \log \frac{1}{2} = -1 \rightarrow x > \frac{1}{2}$
الف) $y = \log_v(1 - \log_3 x) \quad (x > 0)$ $1 - \log_3 x > 0$ $\log_3 x < 1 \rightarrow x < 3$ $D_f = (0, 3)$	ب) $y = \log_v(1 - \log_{\frac{1}{3}} x) \quad (x > 0)$ $1 - \log_{\frac{1}{3}} x > 0$ $\log_{\frac{1}{3}} x < 1 \rightarrow x < \frac{1}{3}$ $D_f = (0, \frac{1}{3})$ در واقع چون تابع ما نزولی است پس علامت برعکس می شود و بی نهایت هم از سمت راست
الف) $y = \sqrt{x^2 - 2x - 8} \quad x^2 - 2x - 8 \geq 0$ $x^2 - 4x + 2 \leq 0 \quad (x-1)(x-5) \leq 0$  $D_f = [1, 5]$	ب) $y = \left(\frac{x^2 + 5}{x^2 + 4} \right)! \quad \frac{x^2 + 5}{x^2 + 4} \in \mathbb{N}$ $x^2 + 5 \in 2Wx + 4W$ $x^2 - 2Wx \in 4W - 5$ $x(2 - 2W) \in 4W - 5 \rightarrow x \in \frac{4W - 5}{2 - 2W}$ $D_f = \left\{ x \mid x = \frac{4k - 5}{2 - 2k}, k \in \mathbb{N} \right\}$

$$9 - \text{ب}) \quad y = \log_r \left(1 - \log^{\frac{n}{r}} \frac{1}{r} \right) \rightarrow \log^{\frac{n}{r}} \frac{1}{r} \rightarrow n > 0.$$

$$\hookrightarrow 1 - \log^{\frac{n}{r}} \frac{1}{r} > 0 \rightarrow \log^{\frac{n}{r}} \frac{1}{r} < 1 \xrightarrow{\text{مناسب (1,0)}} n > \frac{1}{r}$$

$$Df_2 \left(\frac{1}{r}, +\infty \right)$$