

نام و نام خانوادگی کلاس شماره پاسخنامه تشریحی تکلیف شماره ۳

۱۹،۷۵

الف) $y = \frac{x+3}{(x-1)(x^2+x-3)} = \frac{x+3}{(x-1)(x+3)(x-1)} \Rightarrow D_f = \mathbb{R} - \left\{ -\frac{3}{2}, \frac{1}{2}, 1 \right\}$

ب) $y = \frac{(x+3)}{(x+1)(2x^2+7x+3)} = \frac{x+3}{(x+1)(2x+1)(x+3)} \Rightarrow D_f = \mathbb{R} - \left\{ -1, -\frac{1}{2}, -\frac{3}{2} \right\}$

الف) $y = \frac{x+3}{(x-1)(x^2-x+1)} \Rightarrow D_f = \mathbb{R} - \{1\}$

ب) $y = \frac{x+3}{\sqrt{(x-1)(x^2-x+1)}} \Rightarrow \frac{-3}{+1 - \frac{1}{x}} \Rightarrow D_f = \mathbb{R} - (-3, 1]$

$D_f = \mathbb{R} - \{ \text{مخرج} \} \Rightarrow x^2 - \omega |x-1| - 2x + \omega = 0$
 اگر $x \geq 1$ $\Rightarrow x^2 - 7x + 1 = 0 \Rightarrow x = \begin{cases} 2 \\ 5 \end{cases}$
 اگر $x < 1$ $\Rightarrow x^2 + 3x = 0 \Rightarrow x = \begin{cases} 0 \\ -3 \end{cases}$
 $\Rightarrow D_f = \mathbb{R} - \{ -3, 0, 2, 5 \}$

الف) $y = \sqrt{[-x]-5} \Rightarrow [-x] \geq 5 \Rightarrow -x \geq 5 \Rightarrow x \leq -5 \Rightarrow D_f = (-\infty, -5]$

ب) $D_f = \mathbb{R} - \{ \text{مخرج} \} \Rightarrow [x]^2 + 2[x] + 3 = 0 \Rightarrow [x] = \begin{cases} 3 \\ -1 \end{cases}$
 $\Rightarrow x \in \begin{cases} [3, 4) \\ [-1, 0) \end{cases} \Rightarrow D_f = \mathbb{R} - \left([-1, 0) \cup [3, 4) \right)$

الف) $y = \sqrt{\left[x + \frac{1}{x} - 1\right] + \left[x + \frac{1}{x}\right]} = \sqrt{2\left[x + \frac{1}{x}\right] - 1} \Rightarrow \left[x + \frac{1}{x}\right] \geq \frac{1}{2} \Rightarrow x + \frac{1}{x} \geq 1$
 $\Rightarrow x \geq \frac{1}{x} \Rightarrow D_f = \left[\frac{1}{2}, \infty\right)$

ب) $x - \frac{1}{x} = t \Rightarrow \sqrt{[t] + [-t]} = y \Rightarrow t \in \mathbb{Z} \Rightarrow x - \frac{1}{x} \in \mathbb{Z}$
 $\Rightarrow D_f = \left\{ x \mid x = k + \frac{1}{x}, k \in \mathbb{Z} \right\}$

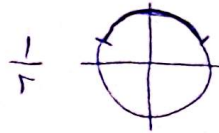
الف) $\sin x, \cos x \neq 0, \tan x \neq -1 \Rightarrow D_f = R - \left\{ \frac{k\pi}{r}, k\pi - \frac{\pi}{r} \right\}$

ب) $y = \sqrt{1 - \cos x} \Rightarrow 1 - \cos x \geq 0 \Rightarrow \cos x \leq 1 \Rightarrow -\frac{1}{r} \leq \sin x \leq \frac{1}{r}$



$\Rightarrow \frac{5\pi}{4} \leq x \leq \frac{7\pi}{4} \Rightarrow D_f = [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}] \cup [k\pi + \frac{5\pi}{4}, k\pi + \frac{7\pi}{4}]$
 $\cup -\frac{\pi}{4} \leq x \leq \frac{\pi}{4} \Rightarrow D_f = [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}]$

الف) $y = \sqrt{2 \sin x - 1} \Rightarrow \sin x \geq \frac{1}{2} \Rightarrow D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$



ب) $y = \sqrt{1 - \cos x} \Rightarrow \cos x \leq \frac{1}{r} \Rightarrow D_f = [2k\pi + \frac{\pi}{r}, 2k\pi - \frac{\pi}{r}]$
 ← انتهای بانه بنیاد: ابتدای بازه توسط ترابش

الف) $y = \arcsin(x^2 + 2x + 1) \Rightarrow -1 \leq x^2 + 2x + 1 \leq 1 \Rightarrow x^2 + 2x \leq 0 \Rightarrow -2 \leq x \leq 0$
 $\Rightarrow D_f = A \cap B = [-2, -1] \cup [-1, 0]$

ب) $\cos y = \sqrt{5 - 2x} \Rightarrow -1 \leq \sqrt{5 - 2x} \leq 1 \Rightarrow 5 - 2x \geq 0, 5 - 2x \leq 1$
 $\Rightarrow D_f = A \cap B = [2, 5]$

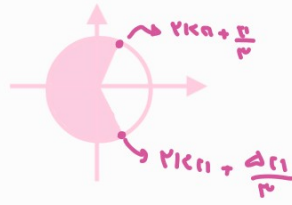
الف) $x > 0, 1 - \log_{\frac{1}{3}} x > 0 \Rightarrow \log_{\frac{1}{3}} x < 1 \Rightarrow x < 3$
 $\Rightarrow D_f = (0, 3)$

ب) $x > 0, 1 - \log_{\frac{1}{3}} x > 0 \Rightarrow \log_{\frac{1}{3}} x < 1 \Rightarrow x > \frac{1}{3}$
 $\Rightarrow D_f = (\frac{1}{3}, +\infty)$

الف) $r^{x-x^2} - 1 \geq 0 \Rightarrow r^{x-x^2} \geq 1 \Rightarrow \log_r r^{x-x^2} \geq \log_r 1 \Rightarrow x - x^2 \geq 0 \Rightarrow x(1-x) \geq 0$
 $\Rightarrow \frac{1}{+} - \frac{1}{+} + \Rightarrow D_f = R - (1, 3)$

ب) $y = \left(\frac{r^x + \omega}{r^x + r} \right)! \Rightarrow \frac{r^x + \omega}{r^x + r} \in W \Rightarrow x \in -\frac{r^x - \omega}{r^x - r}$
 $\Rightarrow D_f = \left\{ x \mid x = \frac{-r^x + \omega}{r^x - r}, k \in W \right\}$

$$v - \text{ب}) \quad 1 - r \cos \theta \geq 0 \rightarrow \cos \theta \leq \frac{1}{r}$$



$$\rightarrow D_f = \left[r \cos \theta + \frac{\pi}{r}, r \cos \theta + \frac{3\pi}{r} \right]$$