

نام و نام خانوادگی کلاس شماره پاسخنامه تشریحی تکلیف شماره ۳

الف) $y = \frac{x+3}{(x-1)(x^2+x-5)} \Rightarrow D_f = R - \left\{ -\frac{5}{2}, \frac{1}{2}, 1 \right\}$

ب) $y = \frac{(x+3)}{(x+1)(2x^2+7x+5)} \Rightarrow D_f = R - \left\{ -1, -\frac{1}{2}, -\frac{5}{2}, -3 \right\}$

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

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

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

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

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

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

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



$\Rightarrow \frac{\omega\pi}{r} \leq x \leq \frac{\gamma\pi}{r} \Rightarrow D_f = \left[\frac{\omega\pi}{r}, \frac{\gamma\pi}{r} \right] \cup \left[\frac{\omega\pi}{r} + \frac{\gamma\pi}{r}, \frac{\gamma\pi}{r} + \frac{\gamma\pi}{r} \right]$
 $\cup -\frac{\pi}{r} \leq x \leq \frac{\pi}{r} \Rightarrow D_f = \left[k\pi - \frac{\pi}{r}, k\pi + \frac{\pi}{r} \right]$

الف) $y = \sqrt{r \sin x - 1} \Rightarrow \sin x \geq \frac{1}{r}$ $\Rightarrow D_f = \left[\frac{\gamma\pi}{r}, \frac{\gamma\pi}{r} + \frac{\gamma\pi}{r} \right]$

ب) $y = \sqrt{1 - r \cos x} \Rightarrow \cos x \leq \frac{1}{r}$ $\Rightarrow D_f = \left[\frac{\gamma\pi}{r}, \frac{\gamma\pi}{r} - \frac{\pi}{r} \right]$

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

ب) $\cos y = \sqrt{\omega - rx} \Rightarrow -1 \leq \sqrt{\omega - rx} \leq 1 \Rightarrow \omega - rx \geq 0, \omega - rx \leq 1$
 $\Rightarrow D_f = A \cap B = [r, r, \omega]$

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

ب) $x > 0, 1 - \log_{\frac{1}{r}} x > 0 \Rightarrow \log_{\frac{1}{r}} x < 1 \Rightarrow x > \frac{1}{r}$
 $\Rightarrow D_f = \left[\frac{1}{r}, +\infty \right)$

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

ب) $y = \left(\frac{rx + \omega}{rx + r} \right)!$ $\Rightarrow \frac{rx + \omega}{rx + r} \in W \Rightarrow x \in -\frac{r\omega - \omega}{r\omega - r}$

$\Rightarrow D_f = \left\{ x \mid x = \frac{-rk + \omega}{rk - r}, k \in W \right\}$ ← باس