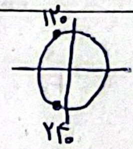
نام و نام خانوادگی ..تینا بلک‌بش.......... پاسخنامه تشریحی تکلیف شماره ..۵.... کلاس ..دهم تجربی.....B......

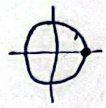
۱

الف) $2\cos x+1\neq 0 \rightarrow 2\cos x\neq -1 \rightarrow \cos x\neq -\frac{1}{2}$



$D_f = R-\{2k\pi+\frac{2\pi}{3}, 2k\pi+\frac{4\pi}{3}\}$

ب) $\cos x-1\neq 0 \rightarrow \cos x\neq 1$

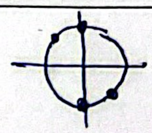


$D_f = \mathbb{R}-\{2k\pi\}$

۲

الف) $\tan x+1\neq 0 \rightarrow \tan x\neq -1$

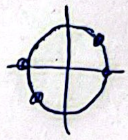
$\cos x\neq 0$



$D_f = \mathbb{R}-\{k\pi+\frac{\pi}{2}, k\pi-\frac{\pi}{4}\}$

ب) $\cot x-1\neq 0 \rightarrow \cot x\neq 1 \longrightarrow$

$\sin x\neq 0$



$D_f = \mathbb{R}-\{k\pi, k\pi+\frac{\pi}{4}\}$

۳

الف) $\sin y = x^2-2 \rightarrow -1\leq x^2-2\leq 1$ (+2) $\quad 1\leq x^2\leq 3 \rightarrow \sqrt{1}\leq x\leq\sqrt{3}$

$1\leq x\leq\sqrt{3} \xrightarrow{D_f=} [1,\sqrt{3}]$

ب) $-1\leq\sqrt{x}-3\leq 1$ (+3) $\rightarrow 2\leq\sqrt{x}\leq 4 \rightarrow 4\leq x\leq 16 \rightarrow D_f=[4,16]$

۴

الف) $-1\leq |x|-3\leq 1$ (+3) $\quad 2\leq |x|\leq 4 \rightarrow 2\leq x\leq 4$

$-2\geq x\geq -4$

$D_f=[-4,-2]\cup[2,4]$

$\rightarrow D_f=[-3,-2]\cup[-1,0]$

ب) $-1\leq x^2+3x+1\leq 1 \rightarrow \begin{cases} x(x+3)\leq 0 & \text{(I)} \\ (x+1)(x+2)\geq 0 & \text{(II)} \end{cases}$

(I): $+\ -3\ -\ 0\ +$ $\quad [-3,0]$

(II): $+\ -2\ -\ -1\ +$

۵

الف) $(x-2)(x+2)>0$ $\quad +\ -2\ -\ 2\ +$ $\quad (-\infty,-2)\cup(2,+\infty)$

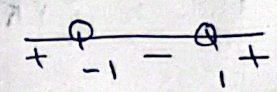
ب) $2-|x|>0 \rightarrow |x|<2 \rightarrow -2<x<2\ D_f=(-2,2)$

۶

الف) $5-x>0 \rightarrow x<5$ ، $x-3>0 \rightarrow x>3$ $\longrightarrow D_f = (3,5)-\{4\}$

$x-3\neq 1 \rightarrow x\neq 4$ ، $x+3\neq 1 \rightarrow x\neq -2$

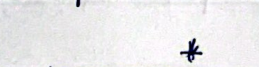
ب) $x^2-1>0 \rightarrow (x-1)(x+1)>0$ ، $x+3>0 \rightarrow x>-3$



$\rightarrow D_f = (-3,-1)-\{-2\} \cup (1,+\infty)$

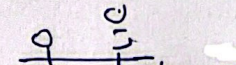
۷

الف) $\frac{x^2-4x+3}{x-3}>0 \rightarrow \frac{(x-1)(x-3)}{x-3}>0$ (۱) (۳) (۲)



$\rightarrow D_f = (1,3)\cup(3,+\infty)$

ب) $\frac{x+3x}{x-2}>0$ (-۳) (+۲)



$(-\infty,-3)\cup(2,+\infty)$

$D_f = (-5,-3)\cup(2,+\infty) - \{-4\}$

$x+5>0 \rightarrow x>-5$ ، $x+5\neq 1 \rightarrow x\neq -4$

۸

الف) $\begin{cases} x-2>0 \rightarrow x>2 \\ 3-\log_2^{(x-2)} \geq 0 \end{cases} \longrightarrow \log_2^{x-2} \leq 3 \rightarrow x-2 \leq 8 \rightarrow x \leq 10$

$D_f = (2,10]$

ب) $x>0$

$2\log_3^x - 1>0$ ، $2\log_3^x > 1$ ، $\log_3^x > \frac{1}{2} \rightarrow x > 3^{\frac{1}{2}}$ ، $x>\sqrt{3}$

$D_f = (\sqrt{3},+\infty)$

۹

الف) $4^x+1\neq 0 \rightarrow 4^x \neq -1$ حقیقی $\longrightarrow D_f = \mathbb{R}$

ب) $4^x-1\neq 0 \rightarrow 4^x\neq 1 \rightarrow D_f = \mathbb{R}-\{0\}$

ج) $4^x-2\neq 0 \rightarrow 4^x\neq 2 \rightarrow (2^2)^x \neq 2 \rightarrow 2^{2x}\neq 2^1 \rightarrow 2x\neq 1 \rightarrow x\neq \frac{1}{2}$

$D_f = \mathbb{R}-\{\frac{1}{2}\}$

د) $3^x\neq 0 \rightarrow 4^x-2\neq 0$

$D_f = \mathbb{R}-\{\log_4^3\}$

۱۰

الف) $4x+1 \in w \rightarrow x = \frac{w-1}{4} \rightarrow D_f = \{x \mid x = \frac{k-1}{4}, k\in w\}$

$\Rightarrow D_f = \{x \mid x = \frac{5k-2}{2k-3}, k\in w\}$

ب) $\frac{3x-2}{2x-5} \in w \rightarrow 2xw-5w = 3x-2 \rightarrow 2xw-3x = 5w-2$

$x(2w-3) = 5w-2$

$x = \frac{5w-2}{2w-3}$