۱۹:۲۰

۲۵

نام و نام خانوادگی ....درسا کیوانی........ پاسخنامه تشریحی تکلیف شماره ...۴.... کلاس ....دهم ریاضی ج....

**۱**

الف)
$$\begin{cases} 4-\sqrt{2-x}\geq 0 \rightarrow \sqrt{2-x}\leq 4 \rightarrow 2-x\leq 16 \rightarrow x\geq -14 \\ 2-x\geq 0 \rightarrow x\leq 2 \end{cases} \xRightarrow{\cap} D_f=[-14,2]$$

ب)
$$\begin{cases} 3-\sqrt{x-2}\geq 0 \rightarrow \sqrt{x-2}\leq 3 \rightarrow x-2\leq 9 \rightarrow x\leq 11 \\ x-2\geq 0 \rightarrow x\geq 2 \end{cases} \xRightarrow{\cap} D_f=[2,11]$$

**۲**

الف) $4-2x^2\geq 0$

$2x^2\leq 4$

$x^2\leq 2$

$-\sqrt{2}\leq x\leq \sqrt{2}$

$\Longrightarrow D_f=[-\sqrt{2},\sqrt{2}]$

ب) $3|x|-9\geq 0$

$3|x|\geq 9$

$|x|\geq 3 \rightarrow \begin{cases} x\geq 3 \\ x\leq -3 \end{cases}$

$\xRightarrow{\cup} D_f=(-\infty,-3]\cup[3,+\infty)$

**۳**

الف) $|x|-3\neq 0$

$|x|\neq 3 \rightarrow x\neq \pm 3$

$\Longrightarrow D_f=\mathbb{R}-\{\pm 3\}$

ب)
$$\begin{cases} \sqrt{x}-3\neq 0 \\ \sqrt{x}\neq 3 \rightarrow x\neq 9 \\ x\geq 0 \end{cases}$$

$\xRightarrow{\cap} D_f=[0,+\infty)-\{9\}$

**۴**

الف)
$$\begin{cases} 3-|x|\geq 0 \rightarrow |x|\leq 3 \rightarrow -3\leq x\leq 3 \\ |x|+2\neq 0 \rightarrow |x|\neq -2 \end{cases} \xRightarrow{\cap} D_f=[-3,3]$$
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ب)
$$\begin{cases} 4-x^2\geq 0 \rightarrow x^2\leq 4 \rightarrow -2\leq x\leq 2 \\ |x|-1\neq 0 \rightarrow |x|\neq 1 \rightarrow x\neq \pm 1 \end{cases} \xRightarrow{\cap} D_f=[-2,2]-\{\pm 1\}$$

**۵**

الف) $\sqrt{x+|x|}\neq 0 \rightarrow x+|x|>0$

$|x|>-x$

$+$ ✓

$-$ ✗

$0$ ✗

$\Rightarrow D_f=\mathbb{R}^+=(0,+\infty)$

ب) $\sqrt{x|x|}\neq 0 \rightarrow x|x|>0$

$+$ ✓

$-$ ✗

$0$ ✗

$\Longrightarrow D_f=\mathbb{R}^+=(0,+\infty)$

**۶**

الف) $2-[x] \geq 0$

$[x] \leq 2$

$x < 3$

$\Longrightarrow D_f = (-\infty, 3)$

ب) $2-[x] > 0$

$[x] < 2$

$x < 2$

$\Longrightarrow D_f = (-\infty, 2)$

**۷**

الف) $x[x] \neq 0$

$\oplus$ ✓

$\ominus$ ✓

$\odot$ ×

$\Rightarrow D_f = R - [0, 1)$

ب) $\sqrt{-x[x]} \neq 0 \rightarrow -x[x] > 0$

$x[x] < 0$

$\oplus$ ×

$\ominus$ ×

$\odot$ ×

$\Rightarrow D_f = \phi$

**۸**

الف) $\left[x-\frac{1}{3}\right]+\left[x+\frac{2}{3}\right] \geq 0 \rightarrow \left[x+\frac{2}{3}-1\right]+\left[x+\frac{2}{3}\right] \geq 0 \rightarrow \left[x+\frac{2}{3}\right]-1+\left[x+\frac{2}{3}\right] \geq 0$

$2\left[x+\frac{2}{3}\right] \geq 1 \rightarrow \left[x+\frac{2}{3}\right] \geq \frac{1}{2} \rightarrow x+\frac{2}{3} \geq 1 \rightarrow x \geq \frac{1}{3} \Longrightarrow D_f = \left[\frac{1}{3}, +\infty\right)$

ب) $\left[x-\frac{1}{3}\right]+\left[-\left(x-\frac{1}{3}\right)\right] \geq 0 \longrightarrow \begin{cases} a \in Z & [a]+[-a]=0 \\ a \notin Z & [a]+[-a]=-1 \end{cases} \Rightarrow x-\frac{1}{3} \in Z$

$\Rightarrow D_f = \left\{x \mid x = k+\frac{1}{3},\ k \in Z\right\}$

**۹**

الف) $2\sin^2 x - 1 \neq 0$

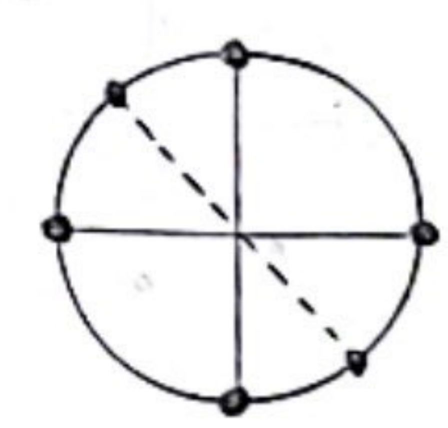
$\sin^2 x \neq \frac{1}{2}$

$\sin x \neq \pm\frac{1}{\sqrt{2}} = \pm\frac{\sqrt{2}}{2}$

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

ب) $\dfrac{\frac{\cos x}{\sin x}+1}{\frac{\sin x}{\cos x}+1} \Rightarrow \begin{cases} \tan x+1 \neq 0 \rightarrow \tan x \neq -1 \\ \sin \neq 0 \\ \cos \neq 0 \end{cases}$

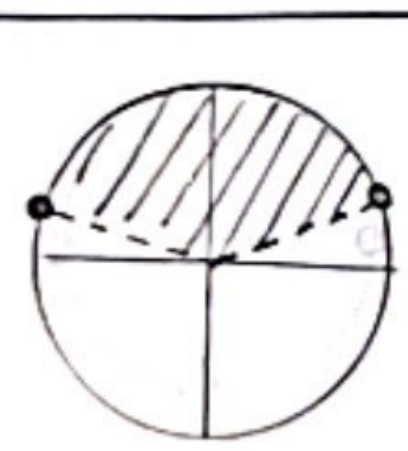
$\Rightarrow D_f = R - \left\{\frac{k\pi}{2},\ k\pi-\frac{\pi}{4}\right\}$



**۱۰**

الف) $2\sin x - 1 \geq 0$

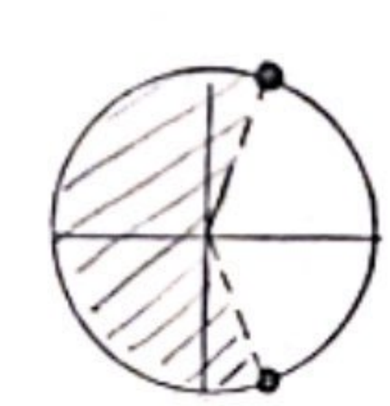
$\sin x \geq \frac{1}{2}$



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

ب) $1-2\cos x \geq 0$

$\cos x \geq +\frac{1}{2}$



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