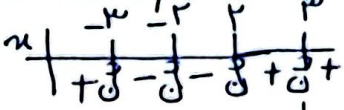
۱۸,۷۵

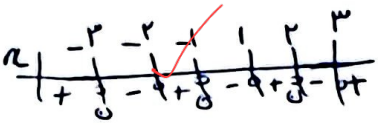
نام و نام خانوادگی: زهرا سادات حسینی پاسخنامه تشریحی تکلیف شماره ۲ کلاس یازدهم B

۱	$2x^2-4x+2+y^2+6y+9=-k+2+9 \to (\sqrt{2}x-\sqrt{2})^2+(y+3)^2=-k+11$ $\to \boxed{k=11}$ ۲
۲	$f(x)\begin{cases}x^2+4x & ; x\geq a\\ 2x+a+2 & ; x<a\end{cases} \to x^2+4x=2x+a+2 \xrightarrow{x=a} a^2+4a=2a+a+2$ $a^2+a-2=0 \to (a-1)(a+2)=0$ غ‌ق‌ق $a\geq 0$ $f(1)=1+4=2+1+2=\boxed{5}$ ۲
۳	$f(x)\begin{cases}2x^2-b & ; \lvert x+1\rvert\geq 2\\ a+2x & ; -3<x<-1\end{cases} \to \begin{cases}x+1\geq 2 \to x\geq 1\\ x+1\leq -2 \to x\leq -3\end{cases}$ $x=-3$ مشترک مرز ضابطه $\Rightarrow 2(-3)^2-b=a+2(-3) \to 18-b=a-6 \to a+b=18+6=\boxed{24}$ ۲
۴	$y=\sqrt{6x-a}+\sqrt{b-3x}$ $\begin{cases}6x-a\geq 0 \to 6x\geq a \to x\geq \frac{a}{6}\\ b-3x\geq 0 \to 3x\leq b \to x\leq \frac{b}{3}\end{cases} \to \frac{a}{6}=\frac{b}{3}=2 \to \begin{cases}a=12\\ b=6\end{cases} \to \boxed{\frac{b}{a}=\frac{6}{12}=\frac{1}{2}}$ ۲
۵	الف) $\begin{cases}\frac{x+1}{\lvert x-3\rvert}\geq 0 & x: -1;\ - \ 0 \ +\\ x-3\neq 0 \to x\neq 3\end{cases} \to D_{f_1}=[-1,+\infty)-\{3\}$ $\begin{cases}\frac{6-x}{x^2+2x+4}\geq 0 & x: 6;\ + \ 0 \ -\end{cases} \to D_{f_2}=[6,+\infty)$ ($x<6$) $\to \Delta<0$ $D_f=[6,+\infty)$ $x\in[-1,6]-\{3\}$ ب) $\begin{cases}[x]-4\geq 0 \to [x]\geq 4 \to x\geq 4\\ 2-[x]\geq 0 \to [x]\leq 2 \to x<3\end{cases} \xrightarrow{\cap} D_f=\varnothing$ ۱,۵

۶

الف) $\frac{x^2-x-6}{x^2-12x+36} \geq 0 \rightarrow \frac{(x-3)(x+2)}{(x-6)^2} \geq 0 \rightarrow$ 

$D_f = (-\infty,-2) \cup (2,6) \cup (6,+\infty)$

ب) $\frac{(x-1)(x^2-x-6)}{(x+1)(x-2)(x+3)} \geq 0 \rightarrow$  $\rightarrow D_f = (-\infty,-3) \cup [-2,-1) \cup [1,2) \cup [3,+\infty)$

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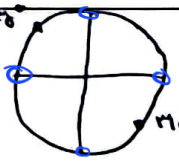
الف) $[-x]-2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow D_f = (-\infty,-2]$

ب) $\frac{5x+6}{[x]^2+[x]-2} \rightarrow [x]^2+[x]-2 \neq 0 \rightarrow ([x]-1)([x]+2) \neq 0 \begin{cases} [x]-1 \neq 0 \rightarrow [x] \neq 1 \rightarrow x < 2 \\ [x]+2 \neq 0 \rightarrow [x] \neq -2 \rightarrow x \geq -2 \end{cases}$

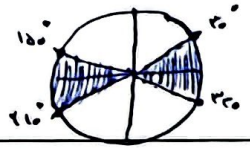
$D_f = \mathbb{R} - [-2,2)$

۸

الف) $\tan x + 1 = 0 \rightarrow \tan x \neq -1 \rightarrow$  $\rightarrow D_f = \mathbb{R} - \{k\pi - \frac{\pi}{4}\}$

$\sin x, \cos x \neq 0$

ب) $1 - 4\sin^2 x \geq 0 \rightarrow \sin^2 x \leq \frac{1}{4} \rightarrow -\frac{1}{2} \leq \sin x \leq +\frac{1}{2} \rightarrow D_f = [k\pi - \frac{\pi}{6}, k\pi + \frac{\pi}{6}]$



۹

الف) $\begin{cases} 1 - \log_{\frac{1}{2}}^{x-1} \geq 0 \rightarrow \log_{\frac{1}{2}}^{x-1} \leq 1 \rightarrow x-1 \geq \frac{1}{2} \rightarrow x \geq \frac{3}{2} \\ x-1 > 0 \rightarrow x > 1 \end{cases} \rightarrow D_f = [\frac{3}{2}, +\infty)$

ب) $\begin{cases} x^2 - x \geq 0 \rightarrow x \in (-\infty,0] \cup [1,+\infty) \\ 1 - \log_4^{x^2-3x} \neq 0 \rightarrow \log_4^{x^2-3x} \neq 1 \rightarrow x^2-3x \neq 4 \rightarrow x^2-3x-4 \neq 0 \rightarrow x \neq -1, 4 \\ x^2-3x > 0 \rightarrow x \in (-\infty,0) \cup (3,+\infty) \end{cases}$

$D_f = (-\infty,0) \cup (3,+\infty) - \{-1,4\}$

۱۰

الف) $2^{4x-x^2} - 8 \geq 0 \rightarrow 2^{4x-x^2} \geq 8 \rightarrow 2^{4x-x^2} \geq 2^3 \rightarrow 4x - x^2 \geq 3 \rightarrow -x^2+4x-3 \geq 0$

$D_f = [1,3]$

ب) $y = \left(\frac{3x+5}{2x+4}\right)! \rightarrow \frac{3x+5}{2x+4} \in \omega \rightarrow -\frac{4\omega-\omega}{2\omega-3} = x \rightarrow D_f = \{x \mid x = \frac{-4k+\omega}{2k-3}, k \in \omega\}$