تکلیف سری دوم   یازدهم تجربی   پارمیس عباسیان

۱. $2x^2+y^2-4x+6y+k=0$ ← یک تابع ناقص $k=?$

$2x^2+\cancel{y^2}-4x+\cancel{6y}+k=0$

$(y+3)^2=y^2+6y+9$

$2x^2-4x+(k-9)=0 \xrightarrow{\div 2} x^2-2x$

$(x-1)^2=x^2-2x+1 \Rightarrow \times 2 = 2x^2-4x+2$

$k=9+2=\underline{11}$

$f(x)=\begin{cases}x^2+4x & x\geq a\\ 2x+a+2 & x\leq a\end{cases}$ .2 ← $f(1)=?$ ← $a>0$

$\rightarrow a=1 \xrightarrow{x=1} 1+4=5$

$\rightarrow a=1 \xrightarrow{x=1} 2+1+2=5$

$f(x)=\begin{cases}2x^2-b & |x+1|\geq 2\\ a+2x & -3\leq x\leq -1\end{cases}$ ، $a+b=?$

$\begin{cases}2x^2-b & |\overset{-1}{x+1}|\geq 2\\ a+2x & -3\leq x\leq -1\end{cases} \Rightarrow$

$x=-1 \rightarrow 2\underbrace{(-1)^2}_{1}-b=a+2(-1)$

$2-b=a-2$

$\boxed{4=a+b}$

$f(x)=\sqrt{6x-a}+\sqrt{b-3x}$ .4 ← $D_f=\{2\}$ ← حاصل $\frac{b}{a}$

$\sqrt{6(2)-a}+\sqrt{b-6}$

$\sqrt{12-a}+\sqrt{b-6}=0$

$12-a\geq 0 \quad 12\geq a$

$b-6\geq 0 \quad 6\leq b$

$\rightarrow$ Idk but

$a=12 \quad b=12 \rightarrow \frac{12}{12}=1 \quad \underbrace{\sqrt{12-12}}_{0}+\sqrt{12-6}=\checkmark$

$a=6 \quad b=6 \rightarrow \sqrt{12-6}+\underbrace{\sqrt{6-6}}_{0}=\frac{\sqrt{6}}{0}$

$a=12 \quad b=6 \rightarrow \underbrace{\sqrt{12-12}}_{0}+\underbrace{\sqrt{6-6}}_{0}=?$

.5 الف) $y=\sqrt{\frac{\overset{-1}{x+1}}{|x-3|}}+\sqrt{\frac{\overset{6}{6-x}}{x^2+2x+4}}$ $\rightarrow (x+1)^2+3$

$\Rightarrow$

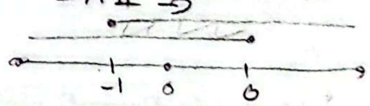
	-1		3	
$-$		$+$		$+$

$[-1,+\infty)-\{3\}$ I

	6	
$+$		$-$

$(-\infty,6]$ II

$\mathrm{I}\cap\mathrm{II} \rightarrow$



$[-1,6]-\{3\}$

ج) $y=\sqrt{[x]-۴}+\sqrt{۲-[x]}$

$[x]-۴\geq ۰$ $\quad$ $۲-[x]\geq ۰$

$[x]\geq ۴$ $\quad$ $[x]\leq ۲$

$[۴,+\infty)\ \cap\ (-\infty,۳)$ -

---

۶. الف) = $\sqrt{\dfrac{x^2-x-6}{x^4-13x^2+36}}$ → $x^2-x-6 \longrightarrow (x-3)(x+2)$

3 $\quad$ -2

$x^2=t \longrightarrow t^2-13t+36 \longrightarrow (t-9)(t-4)$

9 $\quad$ 4

$\Rightarrow (x^2-9)(x^2-4)$

$(x-3)(x+3)(x+2)(x-2)$

3 $\quad$ -3 $\quad$ -2 $\quad$ 2

-3	-2 *	2	3 *

+ ق − ق − ق + ق +

$(-\infty,-3)\cup(۲,۳)\cup(۳,+\infty)$

ب) $\sqrt{\dfrac{x^3-2x^2-5x+6}{x^3+2x^2-5x-6}}$ فرضیم ریشه ندارد

ریشه → $1^{✓}, 2^{×}, 3^{✓}, -1^{×}, -2^{✓}, -3^{×}$

-2	1	3

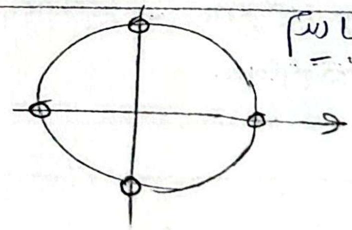
− + − +

$[-2,1]\cup[۳,+\infty)$

---

۸. بخش صورت ۷ دسترسی

الف) $y=\dfrac{\cot x+1}{\tan x+1} = \dfrac{\frac{\cos}{\sin}+1}{\frac{\sin}{\cos}+1} \Rightarrow$



$\{k\pi+\frac{\pi}{2}+k\pi\}$

ب) $y=\sqrt{1-4\sin^2x}$

$1-4\sin^2x\geq 0 \longrightarrow (1-2\sin x)(1+2\sin x)$

$\frac{1}{2}$ $\quad$ $-\frac{1}{2}$

$\left[k\pi\mp\frac{\pi}{4}\right]$

7.

الف) $= \sqrt{[-x]-2}$ $\quad [-x]-2 \geq 0$

$[-x] \geq 2 \rightarrow D_f = (-\infty, -1)$

ب) $y = \dfrac{5x^2+6}{[x]^2-2[x]-3}$ $\mathbb{R}$ $\quad x \longrightarrow [x]^2-2[x]-3 \neq 0$

$[x]^2-2[x] \neq 3$ $\quad [x]^2-[2x]-3=0$

$\mathbb{R}-\{-1\}$

9.

الف) $= \sqrt{1-\log_{\frac{1}{2}}^{x-1}}$ $\quad 1-\log_{\frac{1}{2}}^{x-1} \geq 0$ $\quad \log_{\frac{1}{2}}^{x-1} \leq 1$ $\quad x-1>0$ $\boxed{x>1}$

$x-1 \geq \frac{1}{2} \rightarrow \boxed{x \geq \frac{3}{2}}$ $\quad \Rightarrow D_f = [\frac{3}{2}, +\infty)$

ب) $\dfrac{\sqrt{x^2-x}}{1-\log_4^{x^2-3x}}$ $\longrightarrow x^2-x \geq 0$ $\quad x(x-1) \geq 0$ $\quad (-\infty, 0] \cup [1, +\infty)$

$\longrightarrow 1-\log_4^{x^2-3x} \neq 0$ $\quad \log_4^{x^2-3x} \neq 1$ $\quad x(x-3)>0$ $\quad (-\infty, 0) \cup (3, +\infty)$

$x^2-3x \neq 4$ $\quad x^2-3x-4 \neq 0$

$(x+1)(x-4) \neq 0$ $\quad x \neq -1, 4$

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

10.

الف) $y = \sqrt{2^{4x-x^2}-8}$ $\quad 2^{4x-x^2}-8 \geq 0$

$2^{4x-x^2} \geq 8 \longrightarrow 4x-x^2 \geq 3$

$x(4-x) \geq 3$ $\quad [0, 4]$

ب) $y = \left(\dfrac{3x+5}{2x+4}\right)$ $\quad \dfrac{3u+5}{2u+4} \in \mathbb{W}$

$u \in -\dfrac{4u-5}{2u-3}$ $\longrightarrow x \in \dfrac{5-4u}{2u-3}$

$\rightarrow \left\{ x \mid x = \dfrac{5-4k}{2k-3}, k \in \mathbb{W} \right\}$

CamScanner