آیناز صابری

۱۸,۵

۱) $2x^2+y^2-4x+6y+11=0 \longrightarrow (x-2)^2+(y+3)^2=0$

$2x^2 \to x^2+x^2$

$2(x-1)^2+(y+3)^2=11-k \quad x^2+(4)-4x+y^2+(9)+6y \longrightarrow 11=13$

$\longrightarrow k=11$

۱,۵

۲) $f(x)=\begin{cases} x^2+4x & ; x\geq a \\ 2x+a+2 & ; x\leq a\end{cases} \qquad f(1)=?$

$a^2+4a=2a+a+2 \longrightarrow a^2+a-2=0$

$(a+2)(a-1)$

$a>0 \to$ $a=-2$ غ، $\boxed{a=1}$ ق

$1+4=5$ $\quad f(1)=5$

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

$|x+1|\geq 2 \longrightarrow$ $x+1\leq -2$ یا $\boxed{x\leq -3}$

$x+1\geq 2$ یا $\boxed{x\geq 1}$

$\boxed{x=-3} \hookrightarrow 18-b=-6+a \Rightarrow a+b = \underset{24}{\underline{18+6}}$

۲

۴- $y=\sqrt{6x-a}+\sqrt{b-3x}$

$6x-a\geq 0$, $\boxed{6x\geq a}$, $x\geq \frac{a}{6}$

$b-3x\geq 0$, $\boxed{b\geq 3x}$, $\frac{b}{3}\geq x$

$\frac{a}{6}=\frac{b}{3}$, $\frac{b}{a}=\frac{1}{2}$

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۵) الف) $y=\sqrt{\frac{x+1}{|x-3|}}+\sqrt{\frac{6-x}{x^2+4x+4}}$

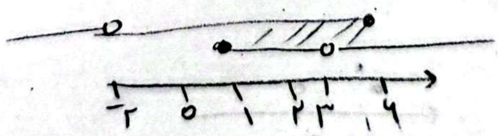
ب) $y=\sqrt{[x]-4}+\sqrt{2-[x]}$

۱,۷۵

الف) $\rightarrow \frac{x+1}{|x-3|}\geq 0$ $\quad x+1\geq 0$ $\quad x\geq -1$ $\qquad \frac{6-x}{(x+2)^2}\geq 0$

$R-\{3\}$

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



ب) $[x]\geq 4 \longrightarrow 4\leq x \;\cap\; \longrightarrow 4\leq x<3$

$2\geq [x] \longrightarrow x<3$ $\quad D=\varnothing$

۹)

الف) $y=\sqrt{\frac{x^2-x-6}{x^4-13x^2+36}}$ $\rightarrow$ $\frac{(x-3)(x+2)}{(x+2)(x-2)(x+3)(x-3)}\geq 0$

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

$x=3,-3,2,-2$ ریشه

$-3$ ت ن، $-2$* ت ن، $2$ ت ن، $3$* ت ن

$+\ |\ -\ |\ -\ |\ +\ |\ +$

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

ب) $y=\sqrt{\frac{x^3-2x^2-5x+6}{x^3+2x^2-5x-6}}$ $\Rightarrow$ $\frac{(x-3)(x+2)(x-1)}{(x+1)(x-2)(x+3)}\geq 0$

$x+1$

$x^3-2x^2-5x+6 \ \big|\ x-1$ ; $x^2-x-6$

$-x^3+x^2$

$-x^2-5x$

$+x^2-x$

$-6x+6$

$+6x-6$

$x^3+2x^2-5x-6 \ \big|\ x+1$ ; $x^2+x-6$

$-x^3-x^2$

$x^2-5x$

$-6x-6$

$-3$، $-2$، $-1$، $1$، $2$، $3$ (ت ن)

$+\ |\ -\ |\ +\ |\ -\ |\ +\ |\ -\ |\ +$

$[3,+\infty)\cup(1,2]\cup[-2,-1)$

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

۱۰)

الف) $y=\sqrt{[-x]-2}$ $\qquad [-x]\geq 2 \qquad -x\geq 2$

$x\leq -2$

ب) $y=\frac{5x^2+6}{[x]^2-2[x]-3}$

$([x]-3)([x]+1)$

$[x]\neq 3 \rightarrow R-[3,4)$

$[x]\neq -1 \rightarrow R-[-1,0)$ $\quad\cup\quad$ $R-[3,4)\cup[-1,0)$

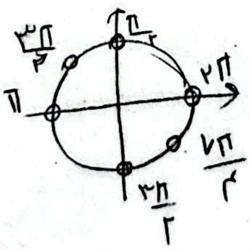
۱۱)

الف) $y=\frac{\cot x+1}{\tan x+1}$

$\sin\neq 0$

$\cos\neq 0$

$\tan x\neq -1$



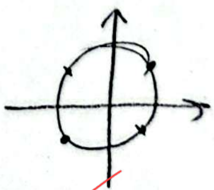

$D_f=(2k\pi+2\pi,2k\pi+\frac{\pi}{2})\cup(\frac{\pi}{2},\frac{3\pi}{4})\cup(\frac{3\pi}{4},\pi)$
$\cup(\pi,\frac{5\pi}{4})\cup(\frac{5\pi}{4},\frac{3\pi}{2})\cup(\frac{3\pi}{2},\frac{7\pi}{4})\cup(\frac{7\pi}{4},2\pi)$

ب) ~~$y=\frac{\sqrt{2x\log(x-1)}}{12\log_{x}^{x^2}-x}$~~ $\quad y=\sqrt{1-4\sin^2x}$

$1-4\sin^2x\geq 0$

$1\geq 4\sin^2x$

$\frac{1}{4}\geq\sin^2x$ $\qquad -\frac{1}{2}\leq\sin x\leq\frac{1}{2}$



$[k\pi-\frac{\pi}{6},k\pi+\frac{\pi}{6}]$

Subject : (                    )                                   Date : ..........

(۹

$y=\sqrt{1-\log_{\frac{1}{2}}^{x-1}}$   $x-1>0 \longrightarrow x>1$

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$\log_{\frac{1}{2}}^{x-1} \leq 1$   $x-1 \leq \frac{1}{2}$   $\boxed{x \leq \frac{3}{2}}$

ب) $y=\frac{\sqrt{x^2-x}}{1-\log_{4}^{x^2-3x}}$   $x(x-1)\geq 0$   $+ \quad 0 \quad - \quad 1 \quad +$   ①

$\log_{4}^{x^2-3x} \neq 1$

$x^2-3x \neq 4$   $x \neq \{4,-1\}$

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

$(x-4)(x+1) \neq 0$   $R-\{4,-1\}$ ②

① $\cap$ ② $\longrightarrow (-\infty,0]-\{-1\} \cup [1,+\infty)-\{4\}$

(۱۰

الف) $y=\sqrt{3^{4x-x^2}-27}$   $3^{4x-x^2} \geq 3^3$

$4x-x^2 \geq 3$   ۱,۷۵

$x^2-4x+3 \leq 0$

$(x-3)(x-1) \leq 0$

$D=(-\infty,1]\cup[3,+\infty)$   $+ \quad 1 \quad - \quad 3 \quad +$

ب) $y=\left(\frac{3x+5}{2x+4}\right)!$

$\frac{3x+5}{2x+4} \in W$

$\frac{-4w+5}{2w-3}$

$\hookrightarrow D=\{x \mid x=\frac{-4k+5}{2k-3}, k\in W\}$

Arman