نام و نام خانوادگی .... پاسخنامه تشریحی تکلیف شماره ..۵.. کلاس ..دوازدهم تجربی A..

$f(2x+1)+f(x+2)=3x+f(3) \rightarrow a(2x+1)+b+a(x+2)+\cancel{b}=3x+3a+\cancel{b}$

$2ax+\cancel{a}+b+ax+\cancel{2a}=3x+\cancel{3a} \rightarrow 3ax+b=3x \rightarrow b=0,\ \boxed{a=1}$

$\rightarrow f(x)=3x \rightarrow y=\sqrt{3x-x^2} \rightarrow \frac{-b}{2a}=\frac{-3}{-2}=\frac{3}{2} \rightarrow \sqrt{R_f}=\sqrt{(-\infty,+\frac{9}{4}]}$ ۱

$\rightarrow R_f:[0,\frac{3}{2}]$

$f(x)=\frac{x^3-4x}{x+2} \rightarrow D_f: \mathbb{R}-\{a,b\} \quad R_f:[c,+\infty)-\{8\} \quad f(\frac{a+b}{2c})=?$

$\hookrightarrow \frac{x(x^2-4)}{x+2} \rightarrow \frac{x(x-2)(x+2)}{(x+2)}=x^2-2x \rightarrow \frac{-b}{2a}=\frac{+2}{2}=1 \rightarrow R_f:[1,+\infty) \rightarrow \boxed{c=1}$ ۲

$x^2-2x=8 \rightarrow x^2-2x-8=0 \quad (x-4)(x+2)=0 \rightarrow x=-2,\ x=4,\ D_f:\mathbb{R}-\{a,b\}$

$\Rightarrow a=-2,\ b=4 \rightarrow f(\frac{a+b}{2c})=\frac{-2+4}{2}=1 \quad f(1)=\frac{1-4}{1+2}=\frac{-3}{3}=\boxed{-1}$

$y=\sqrt[3]{x^3+ax^2+bx-8} \rightarrow \sqrt[3]{(x-2)^3}=x-2$: تابع خطی

$\rightarrow (x-2)^3=x^3-6x^2+12x-8 \Rightarrow \boxed{a=-6},\ \boxed{b=12} \rightarrow D_f:[\underset{min}{-6},\underset{max}{12}]$ ۳

$\left.\begin{array}{l} \rightarrow max=12 \rightarrow x-2 \xrightarrow{x=12} 10 \\ \rightarrow min=-6 \rightarrow x-2 \xrightarrow{x=-6} -8 \end{array}\right\} \rightarrow R_f:[-8,10]$

$y_1=\left(\frac{x+1}{1-x}\right)^{\frac{1}{5}} \qquad y_2=\frac{ax^2-1}{x^2+b} \qquad a+b=?$

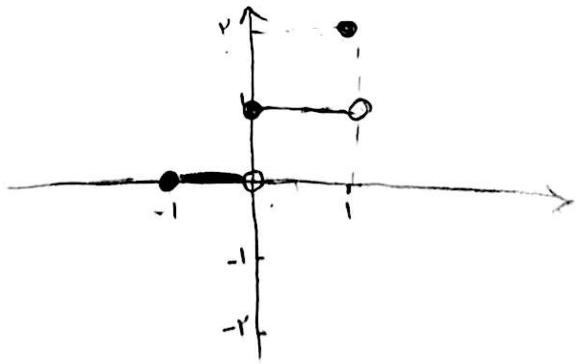
$D_{y_1}=\mathbb{R}-\{1\}=R_{y_2} \rightarrow R_{y_2}=\mathbb{R}-\{1\} \rightarrow ax^2-1\neq x^2+b \rightarrow \begin{array}{l} a\neq 1 \\ b\neq -1 \end{array}$ ۴

$y=\frac{[x]}{x}+\frac{|x|}{x} \rightarrow \frac{[x]+|x|}{x}$

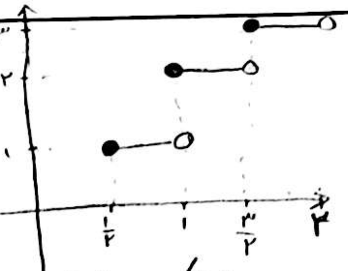
$x=1 \rightarrow \frac{2}{1}=2$

$0<x<1 \rightarrow \frac{0+x}{x}=1$ ۵

$-1\leqslant x<0 \rightarrow \frac{-1-x}{x}$



$y=[x]+\left[x+\frac{1}{2}\right] \quad D_y: \left[\frac{1}{2},2\right)$



$\frac{1}{2}\leqslant x<1 \rightarrow 0+\underbrace{\left[x+\frac{1}{2}\right]}_{1\leqslant x+\frac{1}{2}<1.5} \rightarrow 0+1=1$ ۶

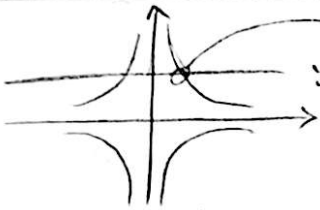
$1\leqslant x+\frac{1}{2}<1.5 \xrightarrow{\text{براکت}} 1$

$1\leqslant x<2 \rightarrow 1+\underbrace{\left[x+\frac{1}{2}\right]}_{1.5\leqslant x+\frac{1}{2}<2.5}$

$1.5\leqslant x+\frac{1}{2}<2.5 \begin{cases} 1.5\leqslant x+\frac{1}{2}<2 \rightarrow 1+1=2 \\ 2\leqslant x+\frac{1}{2}<2.5 \rightarrow 1+2=3 \end{cases}$

از ۳ پاره خط تشکیل شده است

$y=\left|\frac{x+1}{ax+3}\right|<1$



$x+1=ax+3 \rightarrow (1-a)x=2$

$y=1$

$0<\frac{x+1}{ax+3}<1$ ۷

$\frac{-3}{a} \quad -1$

$+ \mid - \mid +$

$\frac{(1-a)x-2}{ax+3}<0 \quad \frac{-3}{a}$

$|x-2|+|y-1|=3$

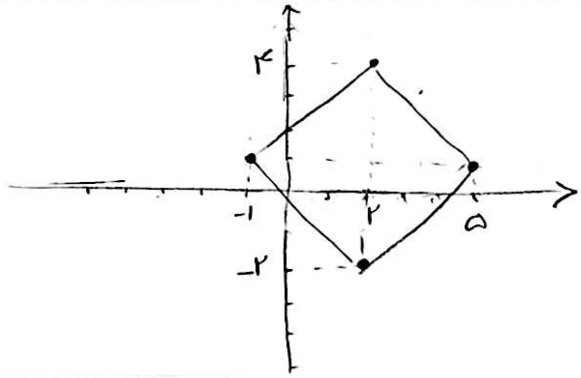
2

$|y-1|=x+1 \xrightarrow{x=-1} \boxed{y=+1}$

$|y-1|=5-x \xrightarrow{x=5} \boxed{y=+1}$

$x\xrightarrow{=2} y=-2$

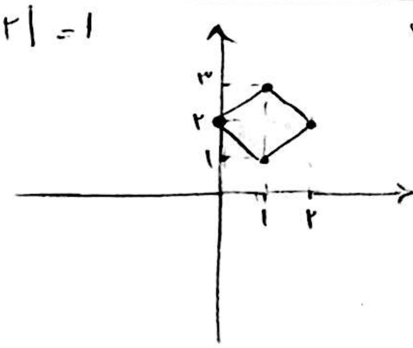
$y=4$

 ۸

الف) $|x-1|+|y-2|=1$

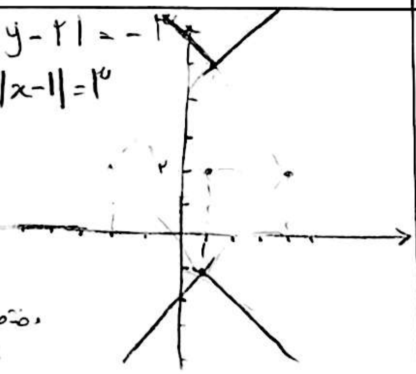
$\begin{vmatrix}1\\1\end{vmatrix} \quad \begin{vmatrix}1\\3\end{vmatrix}$

$\begin{vmatrix}2\\2\end{vmatrix} \quad \begin{vmatrix}0\\2\end{vmatrix}$



ب) $|x-1|-|y-2|=-3$

$\xrightarrow{\times(-1)} |y-2|-|x-1|=3$

 ۹

مختصات مرکز مربع

$\rightarrow \begin{vmatrix}a\\b\end{vmatrix}$

$y=3x+|ax+b| \quad R_f: \mathbb{R}$

① $(3-a)x+\cancel{b}<(3+a)x+\cancel{b} \rightarrow x(\cancel{3}-a-\cancel{3}-a)<0$

$-2ax<0 \rightarrow 2ax>0 \rightarrow ax>0$

$y:\begin{cases}(3+a)x+b & x>\frac{-b}{a}\\ 3x & x=-\frac{b}{a}\\ (3-a)x+b & x<-\frac{b}{a}\end{cases}$ ۱۰