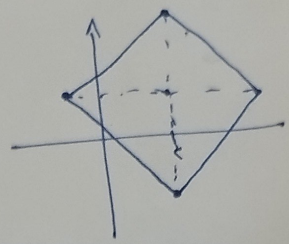
۸ $|x-2|+|y-1|=2$

۲

$y<1,\ x<2$: $y=-x$ | $y>1,\ x<2 \longrightarrow y=x+2$ | $y<1,\ x>2$: $y=x-4$ | $y>1,\ x>2$: $y=x+4$



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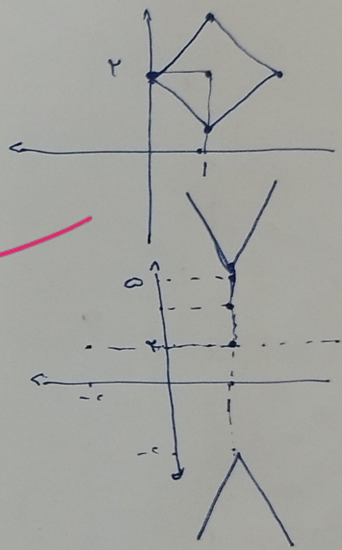
۹ الف) $|x-1|+|y-2|=1$

۲

ب) $|x-1|-|y-2|=3$



عدم رسم

ستون ۲

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۱۰ $y=3x+|ax+b| \quad \underline{R}$

۵

$\left\{\begin{array}{ll} x>\frac{-b}{a} & (3+a)x+b \\ x<\frac{-b}{a} & (3-a)x-b \end{array}\right.$

$[+\infty, -\infty] - \{$حالتی که خط موازی محور افقی$\}$

$(3+a)x+b=(2-a)x-b$

$2ax+2b=0$

باید شیب خط ها هم علامت باشد $-3<a<3$ $|a|<3$

$|c|<|d| \quad (c-d)(c+d)<0$

۱

مهم

۷ $\left|\frac{x+1}{ax+c}\right|<1 \longrightarrow -1<\frac{x+1}{ax+c}<1$

$(ax+x+4)(x-ax-2)<0 \longrightarrow a=1 \rightarrow b=-2 \rightarrow 1-(-2)=\underline{3}$

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

$\frac{x+1}{ax+c}+1>0 \longrightarrow \frac{(a+1)x+4}{ax+2}>0 \quad x=b \rightarrow \left\{\begin{array}{l}(a+1)b=-4 \\ (-a+1)b=2\end{array}\right.$

$a+1=2a-2 \longrightarrow a=3$

1) $f(2x+1)+f(x+2)=4x+f(4) \xrightarrow[\text{if } x=1]{17/5} f(4)=3$

2

$ax+b \longrightarrow$

$\longrightarrow \cancel{2ax+a+b+ax} \xrightarrow{\text{جایگذاری}} 3ax+4a+2b=4x+4$

$\longrightarrow a=1 \quad b=0$

$\sqrt{x-x^2} \longrightarrow R_f=[0,\frac{1}{2}]$

---

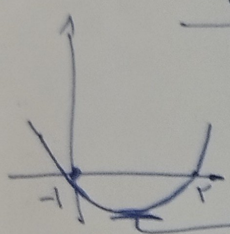
2) $f(x)=\frac{x^3-4x}{x+2}$ 　 $R-\{a,b\}$ 　 $x(x-2)=8$

2

$[c,+\infty)-\{8\}$ 　 $x=4$ شرط فاصله ...

$\frac{x(x^2-4)}{x+2} \longrightarrow \frac{x(x-2)(x+2)}{x+2}=x(x-2)$ 　 $a,b=-2,4$

$C=-1$



$\longrightarrow \boxed{f(-1)=3}$

$x^2-2x \longrightarrow -1$

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3) $\sqrt[3]{x^3+ax^2+bx-8}$ 　 $\sqrt[3]{(x-2)^3} \longrightarrow x^3-6x^2+12x-8$

2

$\left.\begin{array}{l} a=-6 \\ b=12 \end{array}\right\} \longrightarrow R_f \; [-8,10]$

---

4) $\frac{x+1}{1-x}>0 \longrightarrow$
$\begin{array}{c|c|c} & -1 & 1 \\ - & + & - \end{array}$

2 $-1<x<1$

[illegible]

$y_2=\frac{ax^2-1}{x^2+b}$ $\begin{cases} 0 \longrightarrow -\frac{1}{b} \longrightarrow b=1 \\ +\infty \longrightarrow a \longrightarrow a=1 \end{cases}$

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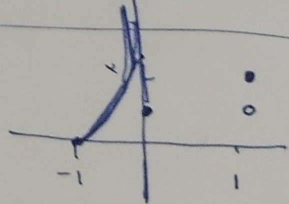
5) $\frac{|x|}{x}+\frac{[x]}{x}$ $\begin{cases} -1\leq x<0 \longrightarrow y=-\frac{1}{x}-1 \\ 0\leq x<1 \longrightarrow y=1 \\ x=1 \longrightarrow y=2 \end{cases}$ $\longrightarrow$



2

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6) $[x]+[x+\frac{1}{2}]$ 　 $\frac{1}{2}\leq x<1$

2

$1\leq x<\frac{3}{2}$

$\frac{3}{2}\leq x<2$