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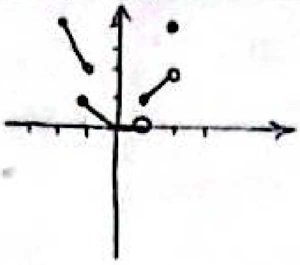
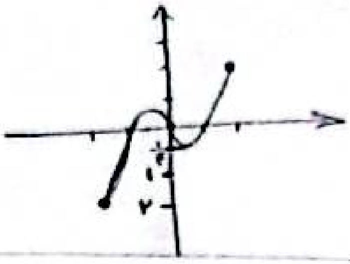
$y=x[x] \rightarrow$



$R_f=[0,4]-\{2\}$

ب) $y=x|x|-x \rightarrow \begin{cases} x^2-x & x\geq 0 \\ -x^2-x & x<0 \end{cases}$



$R_f=[-2,2]$

۸ـ

$y=f(x)=\frac{1}{x}+\frac{1}{x+1}\cdot\frac{1}{x^2+1}=\frac{x+1+x+1}{x^2+1}=\frac{\cancel{(x+1)}\times 2}{x\cancel{(x+1)}}=\frac{2}{x}$

$D_f=R-\{0,-1\} \rightarrow R_f=R-\{0,\frac{2}{-1}\}=R-\{\frac{0}{a},\frac{-2}{b}\} \rightarrow a+b=-2$

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$f(x)=\frac{\cancel{(\sqrt{x}-1)}(\sqrt{x}-2)}{(\sqrt{x}-1)^2}=\frac{\sqrt{x}-2}{\sqrt{x}-1}=y \rightarrow \sqrt{x}=\frac{y-2}{y-1} \rightarrow \frac{y-2}{y-1}\geq 0 \rightarrow$

	1		2	
+	∄	−	0	+

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

$D_f=[0,+\infty)-\{1\}$

$\rightarrow x\neq 1 \rightarrow \sqrt{x}\neq 1 \rightarrow \frac{y-2}{y-1}\neq 1$ ✓ $\rightarrow R_f=(-\infty,1)\cup[2,+\infty)$

۱۰ـ

$f(x)=\frac{x^3+2x^2-x-2}{x^2-1}=\frac{x(x^2-1)+2(x^2-1)}{x^2-1}=\frac{(x^2-1)(x+2)}{\cancel{x^2-1}}=x+2$

$D_f=R-\{1,-1\} \rightarrow R_f=R-\{\underbrace{1+2}_{3},\underbrace{-1+2}_{1}\} \rightarrow 1+3=4$

کاظمی