۱۹٫۵

نام و نام خانوادگی ......امامیت امینی...... پاسخنامه تشریحی تکلیف شماره ...۷... کلاس ...یازدهم ریاضی A...

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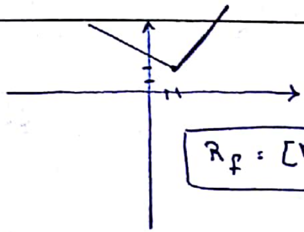
الف) $y = x + |2x - 4|$

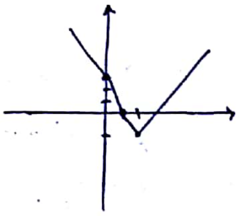
	2	
$x - 2x + 4 =$ $-x + 4$	②	$x + 2x - 4 =$ $3x - 4$



$\boxed{R_f = [2, +\infty)}$

ب) $y = |x-2| + |x-1| - |x|$

	0		1		2	
$2 - x + 1 - x + x$ $-x + 3$	③	$2 - x + 1 - x - x$ $-3x + 3$	⓪	$2 - x + x - 1 - x$ $-x + 1$	(-1)	$x - 2 + x - 1 - x$ $x - 3$



$\boxed{R_f = [-1, +\infty)}$

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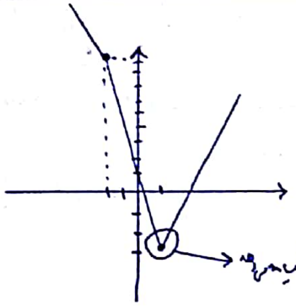
$|3x - 3| - |x + 2| = k$

	-2		1	
$3 - 3x + x + 2$ $-2x + 9$	⑨	$3 - 3x - x - 2$ $-4x + 1$	(-3)	$3x - 3 - x - 2$ $2x - 5$



→ تنها نقطه‌ای مینیمم

$\begin{cases} x = 1 \\ y = -3 \end{cases}$

$\boxed{k = -3}$

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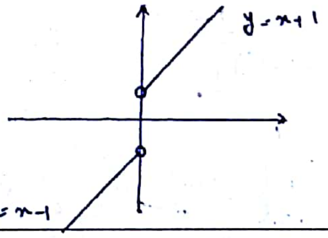
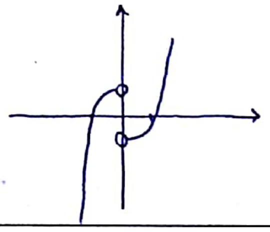
الف) $y = x + \frac{x}{|x|}$

$\begin{cases} x > 0 \to x + 1 \\ x < 0 \to x - 1 \\ x = 0 \to \text{تعریف نشده} \end{cases}$



ب) $y = x|x| - \frac{x}{|x|}$

$\begin{cases} x > 0 \to x^2 - 1 \\ x < 0 \to -x^2 + 1 \\ x = 0 \to \text{تعریف نشده} \end{cases}$



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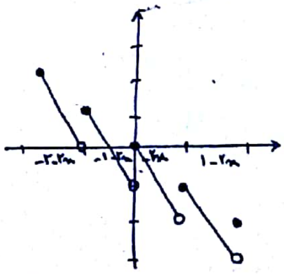
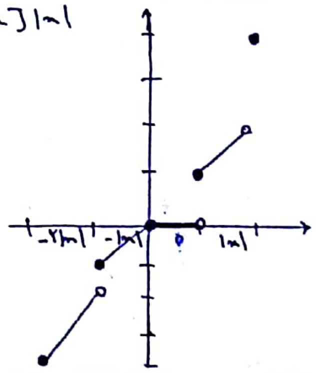
الف) $y = [x] - 2x$



ب) $y = [x]|x|$



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الف) $y = 3x - [3x] \to y = t - [t]$

$3x = t$

$\boxed{R_f = [0, 1)}$

ب) $y = 4x - 4[x] = 4(x - [x])$

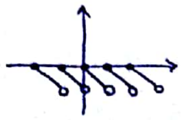
$4 \times [0, 1) \to \boxed{R_f = [0, 4)}$

ج) $x - 5\left[\frac{x}{5}\right] \to 5\left(\frac{x}{5} - \left[\frac{x}{5}\right]\right)$

$5 \times [0, 1) \to \boxed{R_f = [0, 5)}$

د) $y = [2x] - 2x \to y = [t] - t$

$2x = t$



$\boxed{R_f = (-1, 0]}$

$$-\sqrt{a^۲+b^۲}\leq a\sin x+b\cos x\leq\sqrt{a^۲+b^۲}$$

الف) $y=۳\sin x+۲\cos x\to-\sqrt{۳^۲+۲^۲}\leq۳\sin x+۲\cos x\leq\sqrt{۳^۲+۲^۲}\Rightarrow\boxed{R_f=[-\sqrt{۱۳},\sqrt{۱۳}]}$

ب) $y=۴\sin x-۳\cos x\to-\sqrt{۲۵}\leq۴\sin x-۳\cos x\leq\sqrt{۲۵}\Rightarrow\boxed{R_f=[-۵,۵]}$

ج) $y=[۲\sin x+۵\cos x]\to-\sqrt{۲۹}\leq۲\sin x+۵\cos x\leq\sqrt{۲۹}\to-۶\leq[۲\sin x+۵\cos x]\leq۵\Rightarrow\boxed{R_f=\{-۶,-۵,-۴,-۳,-۲,-۱,۰,۱,۲,۳,۴,۵\}}$

د) $y=\sqrt{\cos x-۲\sin x}\to-\sqrt{۵}\leq\cos x-۲\sin x\leq\sqrt{۵}\to۰\leq\sqrt{\cos x-۲\sin x}\leq\sqrt[۴]{۵}\Rightarrow\boxed{R_f=[۰,\sqrt[۴]{۵}]}$

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الف) $y=\sin^۲x+۳\sin x+۲\to$

$\sin x=۱\to y=۶$ max

$\sin x=-۱\to y=۰$

$\sin x=\frac{-b}{۲a}=-\frac{۳}{۲}$ -۰/۵ $\to f(-\frac{۳}{۲})=-\frac{۱}{۴}$ min

$\boxed{R_f=[\cancel{-\frac{۱}{۴}}\,۰,۶]}$

ب) $y=۲\sin^۲x+۳\sin x+۲\to$

$\sin x=۱\to y=۷$ max

$\sin x=-۱\to y=۱$

$\sin x=\frac{-b}{۲a}=\frac{-۳}{۴}\to f(-\frac{۳}{۴})=\frac{۷}{۸}$ min

$\boxed{R_f=[\frac{۷}{۸},۷]}$

۱/۵

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الف) $y=\sin^۲x+۴\cos^۲x=۳\cos^۲x+۱\to-۱\leq\cos x\leq۱\to۰\leq\cos^۲x\leq۱\to۱\leq۳\cos^۲x+۱\leq۴$

$\boxed{R_f=[۱,۴]}$

ب) $y=\frac{۲\cot x}{۱+\cot^۲x}=\frac{\frac{۲\cos x}{\sin x}}{\frac{۱}{\sin^۲x}}=(\sin^۲x)(۲\cos x):\sin x\to۲\sin x\cos x=\sin۲x$

$-۱\leq\sin۲x\leq۱\to\boxed{R_f=[-۱,۱]}$

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الف) $y=\sin^۴x+\cos^۴x\to۲^{-۱}\leq\sin^۴x+\cos^۴x\leq۱$

$\left\{۲^{۱-k}\leq\sin^{۲k}x+\cos^{۲k}x\leq۱\right.$

$\boxed{R_f=[\frac{۱}{۴},۱]}$

ب) $y=[\sin^۸x+\cos^۸x]\to۲^{-۳}\leq\sin^۸x+\cos^۸x\leq۱\to[\sin^۸x+\cos^۸x]=\begin{cases}۰\\۱\end{cases}$

$\boxed{R_f=\{۰,۱\}}$

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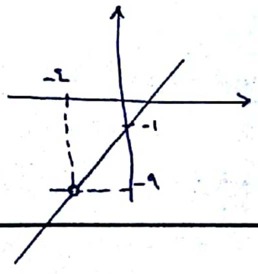
الف) $y=\frac{۲x^۲+۷x-۴}{x+۴}$

$$\begin{array}{r|l}۲x^۲+۷x-۴ & x+۴\\ \hline ۲x^۲+۸x & ۲x-۱\\ \hline -x-۴ & \\ -x-۴ & \\ \hline ۰ & \end{array}$$

$\frac{(\cancel{x+۴})(۲x-۱)}{\cancel{x+۴}}=۲x-۱$

$x=-۴\to y=-۹$

$\boxed{R_f=\mathbb{R}-\{-۹\}}$

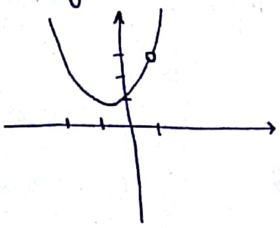


ب) $y=\frac{x^۳-۱}{x-۱}=\frac{(\cancel{x-۱})(x^۲+x+۱)}{\cancel{x-۱}}=x^۲+x+۱$

$x=۱\to y=۳$

$\frac{-b}{۲a}=\frac{-۱}{۲}$

$\frac{۳}{۴}$



$\boxed{R_f=[\frac{۳}{۴},+\infty)}$

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