نام و نام خانوادگی ...علی بلامیان........ پاسخنامه تشریحی تکلیف شماره ..۸.... کلاس یازدهم سری A ......

۱

$2g = \{(-1,2),(0,8),(2,0),(1,8)\}$ $3f = \{(-1,0),(0,3),(1,0)\}$

$2g-3f = \{(-1,2),(0,5),(1,8)\}$ $R_{2g-3f} = \{2,5,8\}$

$\Rightarrow 2+5+8 = 15$

۲

$f(x) = 2x-1 \xrightarrow{D_f=[3,+\infty)} R_f = [5,+\infty)$

$g(x) = \frac{1}{3}x+3 \xrightarrow{D_f=(-\infty,3]} R_f = (-\infty,4]$

$R_f \cup R_g = (-\infty,4] \cup [5,+\infty)$

۳

$\frac{-x^2}{2}+x+3 > \frac{3}{2} \rightarrow -x^2+2x+6 > 3 \rightarrow -x^2+2x+3 > 0$

$\rightarrow -(x^2-2x-3) > 0 \rightarrow -(x-3)(x+1) > 0$

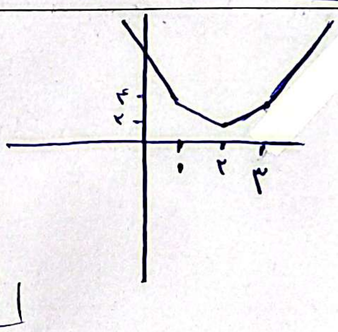
-1		3
$-$	$+$	$-$

$\Rightarrow (a,b) = (-1,3) \Rightarrow \sqrt{b-a} = 2$

۴

$y = |x-1|+|x-3|+|2x-4|$

	1		2		3	
$1-x+3-x+4-2x$		$x-1-x+3-2x+4$		$x-1-x+3+2x-4$		$x-1+x-3+2x-4$
$-4x+8$		$-2x+6$		$2x-2$		$4x-8$

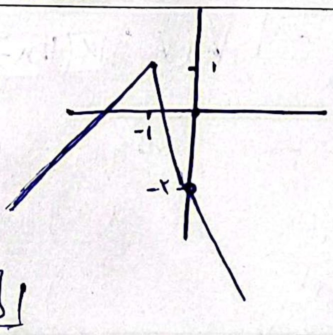


$\Rightarrow y_{min} = 2$

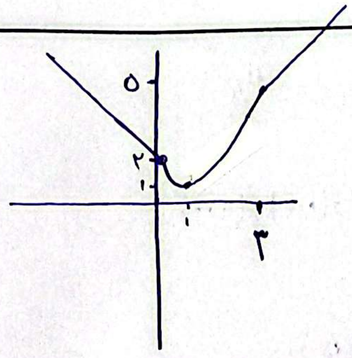
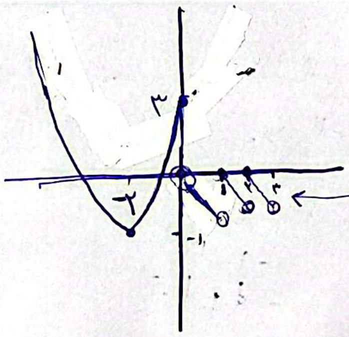
۵

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

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



$\Rightarrow R_f = (-\infty,1]$

 $x+2\ ;\ x\geq 3$ $x^2-2x+2\ ;\ 0\leq x<3 \xrightarrow{x=0} y=2 \quad \frac{-b}{2a}=1 \xrightarrow{y} 1$ $\lvert x\rvert+2\ ;\ x<0$ $\Rightarrow R_f=[1,+\infty)$	٧
$\frac{x^2+5x+m}{x+1}=y \Rightarrow yx+y=x^2+5x+m \Rightarrow x^2+(5-y)x+(m-y)$ $\Rightarrow \Delta\geq 0 \Rightarrow (5-y)^2-4(m-y)\geq 0 \Rightarrow y^2-6y+(25-4m)$ $\frac{-b}{2a}=3 \Rightarrow 3^2-18+25-4m=16-4m\geq 0 \Rightarrow m\leq 4 \overset{m\neq 4}{\Rightarrow} m=\{1,2,3\}$	۶
 $x^2+4x+3\ ;\ x\leq 0 \xrightarrow{x=0} y=3 \quad \frac{-b}{2a}=-2 \quad y=-1$ $[2x]-2x\ ;\ x>0$ $[+]-+$ $\Rightarrow R_f=[-1,+\infty)$	٨
$2x+3\geq 0 \rightarrow x\geq -\frac{3}{2} \Rightarrow D_f=[-\frac{3}{2},+\infty) \Rightarrow b=-\frac{3}{2}$ $\overset{x=-\frac{3}{2}}{\Longrightarrow} y=5 \Rightarrow a+1=5 \Rightarrow a=4$ $\Rightarrow ab=-\frac{3}{2}\times 4=-6$	٩
$f(x)+g(x)=3\sqrt{\left((\sqrt{x+1})+(\sqrt{1-x})\right)^2} \Rightarrow f(x)+g(x)=3(\sqrt{x+1}+\sqrt{1-x})$ $(f(x)+g(x))-f(x)=3\sqrt{x+1}+3\sqrt{1-x}-2\sqrt{x+1}-4\sqrt{1-x}=\sqrt{x+1}-\sqrt{1-x}=g(x)$ $g=\frac{f(x)}{6}-\frac{g(x)}{3}=\frac{f}{6}-\frac{(f+g)-f}{3}=\frac{1}{2}f-\frac{1}{3}(f+g)=(\sqrt{x+1}+2\sqrt{1-x})-(\sqrt{x+1}+\sqrt{1-x})$	١٠

$=\sqrt{1-x} \xrightarrow{[-1,1]} R_f=[0,\sqrt{2}]$