نام و نام خانوادگی ...آرشام پاکی...... پاسخنامه تشریحی تکلیف شماره ..۸.. کلاس ....یازدهم.......

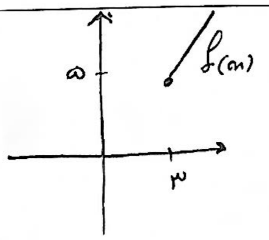
۱

$1 \geq x^2 \Rightarrow 1 \geq x \geq -1 \Rightarrow D_f = [-1,1]$ $\quad D_f \cap D_g = \{-1,0,1\}$

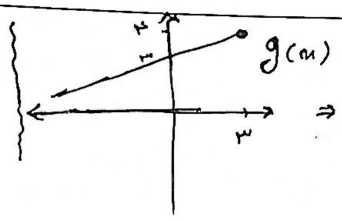
$\Rightarrow 2g-3f = \{(-1,2),(0,5),(1,4)\}$ $\quad R_{2g-3f} = \{2,5,4\}$

$\Rightarrow 2+5+4 = \boxed{11}$

۲



$\Rightarrow R_f = [5,+\infty)$



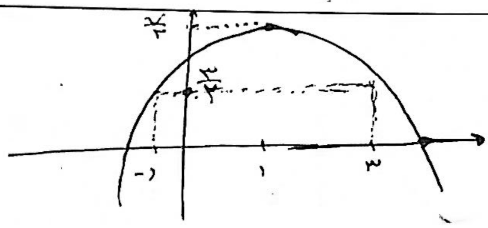
$\Rightarrow R_g = (-\infty,4]$

$\Rightarrow R_f \cup R_g = (-\infty,4] \cup [5,+\infty)$ یا $\mathbb{R}-(4,5)$

۳

$y = -\frac{1}{2}x^2 + x + 3$

$$\max \begin{cases} \frac{-b}{2a} = \frac{-1}{-1} = 1 \\ -\frac{1}{2}+1+3 = \frac{7}{2} \end{cases}$$



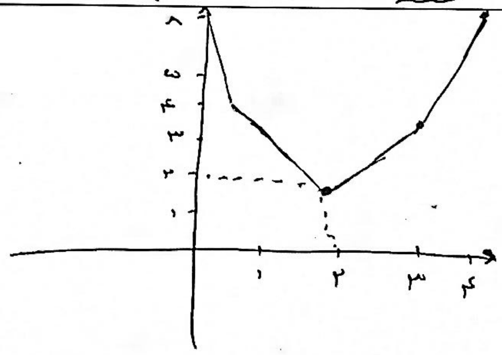
$-\frac{1}{2}x^2 + x + 3 = \frac{3}{2} \Rightarrow -\frac{1}{2}x^2 + x + \frac{3}{2} = 0 \Rightarrow x = -1, 3 \Rightarrow (a,b) = (-1,3)$

$\Rightarrow \sqrt{b-a} = \sqrt{3-(-1)} = \sqrt{4} = \boxed{2}$

۴

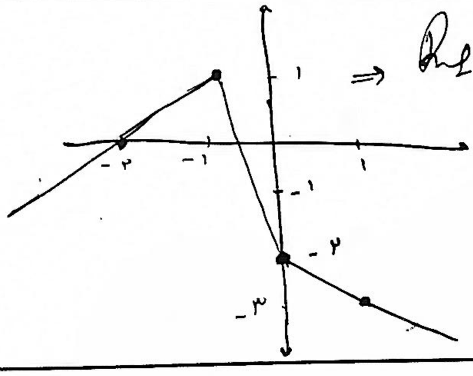
	1		2		3	
$-4x+8$		$-2x+6$		$2x-2$		$4x-8$

$\Rightarrow \boxed{\min = 2}$



۵

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



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

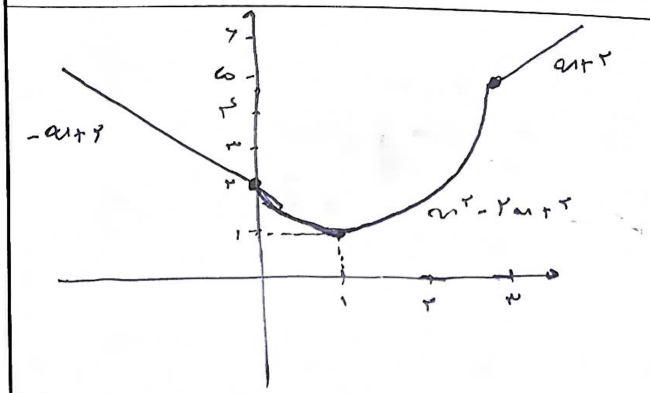
$x^2+5x+m=yx+y \Rightarrow x^2+(5-y)x+(m-y)=0 \Rightarrow \Delta \geq 0$

$\Rightarrow (5-y)^2-4(m-y)\geq 0 \Rightarrow 25+y^2-10y-4m+4y\geq 0 \Rightarrow \underline{y^2-6y+(25-4m)}\geq 0$

چون عبارت درجه دوم بزرگتر مساوی صفر است پس دلتای آن کوچکتر مساوی صفر باید باشد. ۶

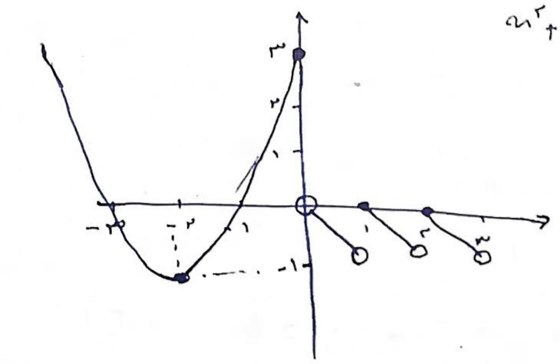
$\Rightarrow \Delta\leq 0 \Rightarrow (-6)^2-4(25-4m)\leq 0 \Rightarrow 36-100+16m\leq 0 \Rightarrow 16m\leq 64 \Rightarrow m\leq 4$

$\Rightarrow m=\{1,2,3,4\} \Rightarrow$ به ازای ۴ مقدار طبیعی



$\min \begin{cases} \frac{-b}{2a}=\frac{2}{2}=1 \\ 1-2+2=1 \end{cases}$ ۷

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



$x^2+4x+3=(x+1)(x+3)$

$\min \begin{cases} \frac{-b}{2a}=\frac{-4}{2}=-2 \\ (-2)^2+4(-2)+3=-1 \end{cases}$ ۸

$\Rightarrow R_f=[-1,+\infty)$

$2x\geq 3 \Rightarrow x\geq \frac{3}{2} \Rightarrow D_f=[\frac{3}{2},+\infty)=[b,+\infty) \Rightarrow b=\frac{3}{2}$

$\max = a+1-\sqrt{2(\frac{3}{2})+3}=a+1=5 \Longrightarrow a=4$ ۹

$\Rightarrow ab=4\times\frac{3}{2}=\boxed{6}$

$x\geq -1\ ,\ 1\geq x \Rightarrow D_f=D_g=[-1,1]$ $\qquad 2+2\sqrt{1-x^2}=(\sqrt{1-x}+\sqrt{1+x})^2$

$\Rightarrow 3\sqrt{2+2\sqrt{1-x^2}}=3(\sqrt{1-x}+\sqrt{1+x})=f(x)+g(x) \Rightarrow g(x)=3\sqrt{1-x}+3\sqrt{1+x}-2\sqrt{x+1}-4\sqrt{1-x}$

$\Rightarrow g(x)=\sqrt{x+1}-\sqrt{1-x} \Rightarrow y=\frac{f(x)-2g(x)}{6} \Rightarrow y=\frac{6\sqrt{1-x}}{6}=\sqrt{1-x}$ ۱۰

$\xrightarrow{D=[-1,1]} \boxed{R=[0,\sqrt{2}]}$