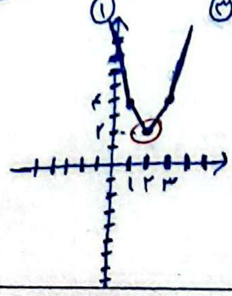
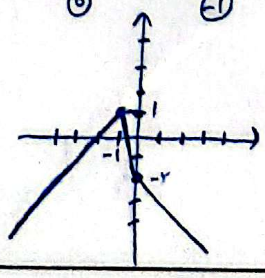
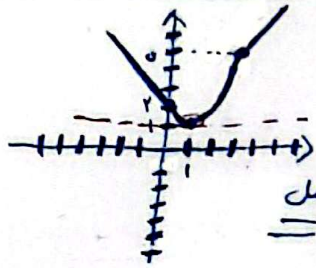
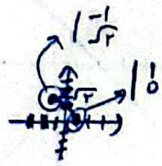
نام و نام خانوادگی ...... پاسخنامه تشریحی تکلیف شماره ۸ ...... کلاس ......

۱	$f(x)=\sqrt{1-x^2} \to 1-x^2\ge 0 \Rightarrow x^2\le 1 \Rightarrow -1\le x\le 1 \Rightarrow D_f=[-1,1]$ $g=\{(-1,1),(0,4),(2,0),(1,2)\} \Rightarrow D_g=\{-1,0,2,1\}$ $\xRightarrow{D_f\cap D_g} \{-1,0,1\}$ $f(1)=0,\ g(1)=2 \Rightarrow (2g-3f)(1)=4$ $f(0)=1,\ g(0)=4 \Rightarrow (2g-3f)(0)=5$ $f(-1)=0,\ g(-1)=1 \Rightarrow (2g-3f)(-1)=2$ $\Rightarrow 2g-3f=\{(1,4),(0,5),(-1,2)\} \xRightarrow{\text{مجموع اعضا برد}} =4+5+2=\boxed{11}$	
۲	$f(x)=2x-1,\ D_f=[3,+\infty)$ $\xRightarrow[\text{با شیب + است}]{\text{تابع f یک تابع خطی}}$ $R_f=[5,+\infty)$ $\quad 2(3)-1$ $g(x)=\frac{1}{3}x+3,\ D_g=(-\infty,3]$ $\xRightarrow[\text{با شیب + است}]{\text{تابع g یک تابع خطی}}$ $R_g=(-\infty,4]$ $\xRightarrow{R_f\cup R_g} \boxed{(-\infty,4]\cup[5,+\infty)}$	
۳	$y=\frac{-x^2}{2}+x+3$ $\boxed{(a,b)}$ (I) $\frac{-x^2}{2}+x+3>\frac{3}{2} \Rightarrow \frac{-x^2}{2}+x+\frac{3}{2}>0$ $\xRightarrow{\times 2} -x^2+2x+3>0 \Rightarrow (x+1)(-x+3)>0$ $\quad$ $-1,\ 3$: $-\ 0\ +\ 0\ -$ (II) $\boxed{(-1,3)}$ $\xRightarrow[\text{بیشترین مقدار } (b-a)]{(I),(II)} a=-1,\ b=3 \Rightarrow \sqrt{b-a}=\sqrt{4}=\boxed{2}$	
۴	$y=\|x-1\|+\|x-3\|+\|2x-4\|$  $1,\ 2,\ 3$: $-x+1-x+3-2x+4=-4x+8$ | $x-1-x+3-2x+4=-2x+6$ | $x-1-x+3+2x-4=2x-2$ | $x-1+x-3+2x-4=4x-8$ $(4),\ (2),\ (4)$ $\xRightarrow{\text{شکل}} \boxed{\text{کمترین مقدار} = 2}$	
۵	$y=\|x\|-2\|x+1\|$  $-1,\ 0$: $-x+2x+2=x+2$ | $-x-2x-2=-3x-2$ | $x-2x-2=-x-2$ $(1),\ (-2)$ $\xRightarrow{\text{شکل}} \boxed{R_y=(-\infty,1]}$	

پارسا جهانگیری — تکلیف ۵ — یازدهم تجربی - A

$y=\dfrac{x^2+dx+m}{x+1} \Rightarrow xy+y=x^2+dx+m \Rightarrow x^2+(d-y)x+(m-y)=0$ $\Rightarrow x=\dfrac{y-d\pm\boxed{\sqrt{y^2-10y+25+4y-4m}}}{2} \rightarrow y^2-6y+25-4m\geq 0$ $\Rightarrow \Delta\leq 0$ $\Rightarrow 36-100+16m\leq 0 \Rightarrow 16m-64\leq 0$ $\Rightarrow \left.\begin{matrix} m\leq 4 \\ m\in\mathbb{N}\end{matrix}\right\} \Rightarrow m=\{1,2,3,4\}$ الف) ۴ مقدار طبیعی برای m وجود دارد	۶
$f(x)=\begin{cases} x+2 & ; x\geq 3 \overset{x=3}{\Rightarrow} y=5 \\ x^2-2x+2 & ; 0\leq x<3 \overset{x=0}{\underset{x=3}{\Rightarrow}} y=2,\ y=5 \\ \lvert x\rvert+2 & ; x<0 \overset{x=0}{\Rightarrow} y=2 \end{cases}$  $y=x^2-2x+2 \Rightarrow x_s=-\dfrac{b}{2a}=-\dfrac{-2}{2}=1$ $y_s=1-2+2=1$ $\overset{\text{تحلیل}}{\Longrightarrow} \boxed{R_f=[1,+\infty)}$	۷
$f(x)=\begin{cases} x^2+4x+3 & ; x\leq 0 \\ [2x]-2x & ; x>0 \overset{2x=a}{\Longrightarrow} y_2=[a]-a \Rightarrow R_{y_2}=(-1,0] \end{cases}$ $y_1=x^2+4x+3 \Rightarrow x_s=-\dfrac{b}{2a}=-\dfrac{4}{2}=-2 \Rightarrow \left.\begin{matrix} y_1=x^2+4x+3 \\ \text{ext}\vert_{-1}^{-2} \end{matrix}\right\} \overset{a>0}{\Longrightarrow} R_{y_1}=[-1,+\infty)$ $y_s=4-8+3=-1$ $\overset{R_{y_1}\cup R_{y_2}}{\Longrightarrow} \boxed{R_f=[-1,+\infty)}$	۸
$y=a+1-\sqrt{2x+3} \Rightarrow 2x+3\geq 0 \Rightarrow x\geq -\dfrac{3}{2} \Rightarrow \boxed{D_y=[-\tfrac{3}{2},+\infty)}^{(II)}$ $\boxed{D_y=[b,+\infty)}^{(I)} \quad \overset{(I),(II)}{\Longrightarrow} \boxed{b=-\dfrac{3}{2}} \rightarrow \boxed{ab=-6}$ $\boxed{R_y=(-\infty,d]}^{(III)}$ $0\leq\sqrt{2x+3}<+\infty \overset{\times(-1)}{\Longrightarrow} -\infty<-\sqrt{2x+3}\leq 0 \overset{+(a+1)}{\Longrightarrow} -\infty<a+1-\sqrt{2x+3}\leq a+1$ $\Rightarrow \boxed{R_y=(-\infty,a+1]}^{(IV)} \quad \overset{(III),(IV)}{\Longrightarrow} a+1=d \Rightarrow \boxed{a=4}$	۹
$x+1\geq 0 \Rightarrow \boxed{x\geq -1}^{\,I} \qquad 1-x\geq 0 \Rightarrow \boxed{x\leq 1}^{\,II}$ $f(x)=2\boxed{\sqrt{x+1}}+4\boxed{\sqrt{1-x}} \overset{(I)\cap(II)}{\Longrightarrow} D_f=[-1,1]=D_g=D_y$ $f(x)+g(x)=3\sqrt{2+2\sqrt{1-x^2}} \Rightarrow g(x)=3\sqrt{2+2\sqrt{1-x^2}}-f(x)=3\sqrt{2+2\sqrt{1-x^2}}-2\sqrt{x+1}-4\sqrt{1-x}$ $y=\dfrac{f(x)}{6}-\dfrac{g(x)}{3}=\dfrac{2\sqrt{x+1}+4\sqrt{1-x}}{6}-\dfrac{3\sqrt{2+2\sqrt{1-x^2}}-2\sqrt{x+1}-4\sqrt{1-x}}{3}=\dfrac{\sqrt{x+1}}{3}+\dfrac{2\sqrt{1-x}}{3}+\dfrac{2\sqrt{x+1}}{3}+\dfrac{4\sqrt{1-x}}{3}-\sqrt{2+2\sqrt{1-x^2}}$ $=\sqrt{x+1}+2\sqrt{1-x}-\sqrt{(\sqrt{1-x}+\sqrt{1+x})^2}=\sqrt{x+1}+2\sqrt{1-x}-\lvert\sqrt{1-x}+\sqrt{1+x}\rvert$ $=\left.\begin{matrix} \cancel{\sqrt{x+1}}+2\sqrt{1-x}-\sqrt{1-x}-\cancel{\sqrt{1+x}}=\sqrt{1-x} \\ D_f=[-1,1] \end{matrix}\right\} \Rightarrow \boxed{R_y=[0,\sqrt{2}]}$ 	۱۰