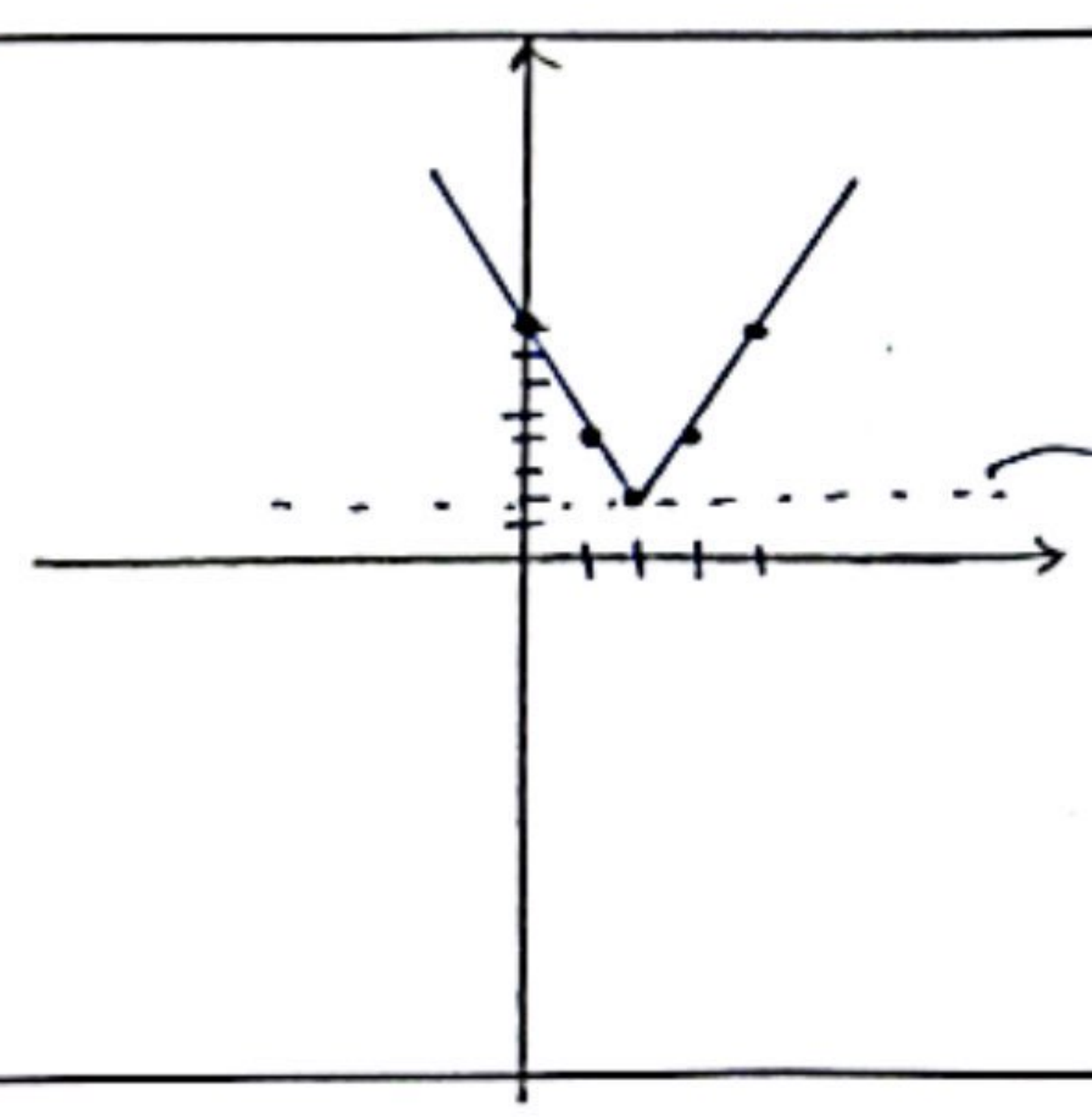
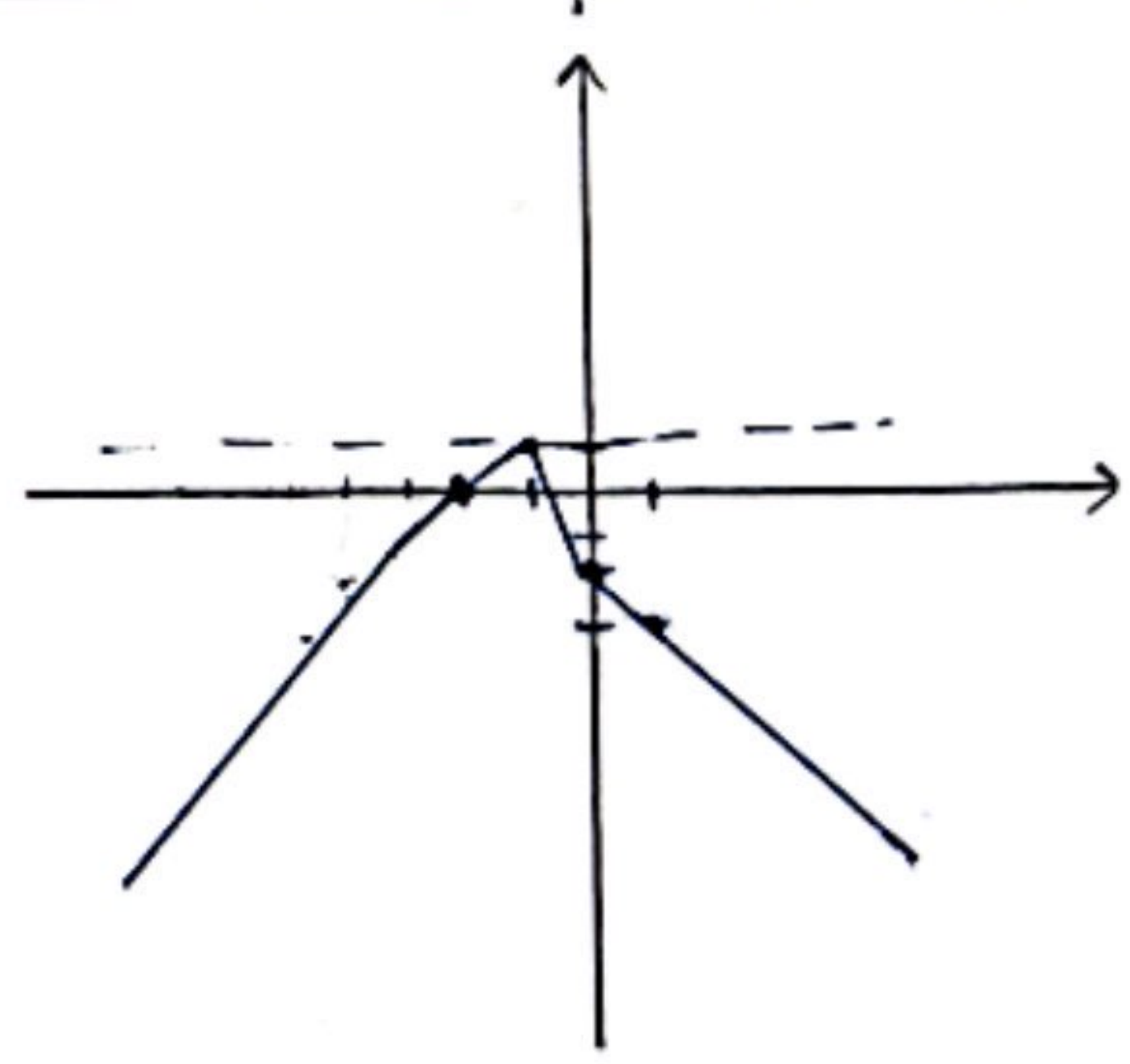
نام و نام خانوادگی .... **پاسخنامه تشریحی تکلیف شماره** ...۸... **کلاس** یازدهم ....

۱	$f(x)=\sqrt{1-x^2} \to (-1,0),(0,1),(1,0) \to$ ها ی ... در f $g(x)=\{(-1,1),(0,4),(2,0),(1,2)\} \to 2g=\{(-1,2),(0,8),(2,0),(1,4)\}$ $3f(x) \to (-1,0),(0,3),(1,0)$ $2g-3f \to D_f \cap D_g \to \{(-1,2),(0,5),(1,4)\} \to R=\{2,5,4\} \to 2+5+4=11$ جواب
۲	$f(x)=2x-1 \to D_f=[3,+\infty) \to R_f=[5,+\infty)$ $\hookrightarrow 2\times 3-1=5 \to x=3$ $g(x)=\frac{1}{3}x+3 \to D_g=(-\infty,3] \to R_f=(-\infty,4]$ $\hookrightarrow \frac{1}{3}\times 3+3=4 \to x=3$ $R_f \cup R_g=(-\infty,4]\cup[5,+\infty) \to$ جواب
۳	$y=-\frac{x^2}{2}+x+3 \to -\frac{x^2}{2}+x+3 \geq \frac{3}{2} \to -x^2+2x+6 \geq 3 \to -x^2+2x+3 \geq 0 \to x=-1,\ x=3$ $\Rightarrow$ -1, 3: $-\ +\ -$ $\to (-1,3)$, a, b $\sqrt{b-a}=\sqrt{3-(-1)}=\sqrt{4}=2 \to$ جواب
۴	$x=1$, $x=3$, $x=2$ $y=\lvert x-1\rvert+\lvert x-3\rvert+\lvert 2x-4\rvert$ 1, 2, 3: $-4x+8$ | $-2x+6$ | $2x-2$ | $4x-8$; (4) (2) (4) $\to x=4 \to 4\times 4-8=8$ $\to x=0 \to -4\times 0+8=8$  کمترین مقدار ۲ جواب
۵	$y=\lvert x\rvert-2\lvert x+1\rvert$ $x=0$, $x=-1$ -1, 0: $x+2$ | $-3x-2$ | $-x-2$; (1) (−2) $\to x=1 \to -(1)-2=-3$ $\to x=-2 \to -2+2=0$  $\to R_f=(-\infty,1]$ جواب

۶

$y=\frac{x^2+5x+m}{x+1}$, $x\neq -1$ $\rightarrow yx+y=x^2+5x+m \Rightarrow x^2+5x-yx+m-y=0 \Rightarrow x^2+x(5-y)+(m-y)=0$

$\Rightarrow x=\frac{-b\pm\sqrt{\Delta}}{2a} \rightarrow \Delta\geq 0 \rightarrow b^2-4ac\geq 0 \Rightarrow (5-y)^2-4(m-y)\geq 0 \rightarrow y^2+25-10y-4m+4y\geq 0$

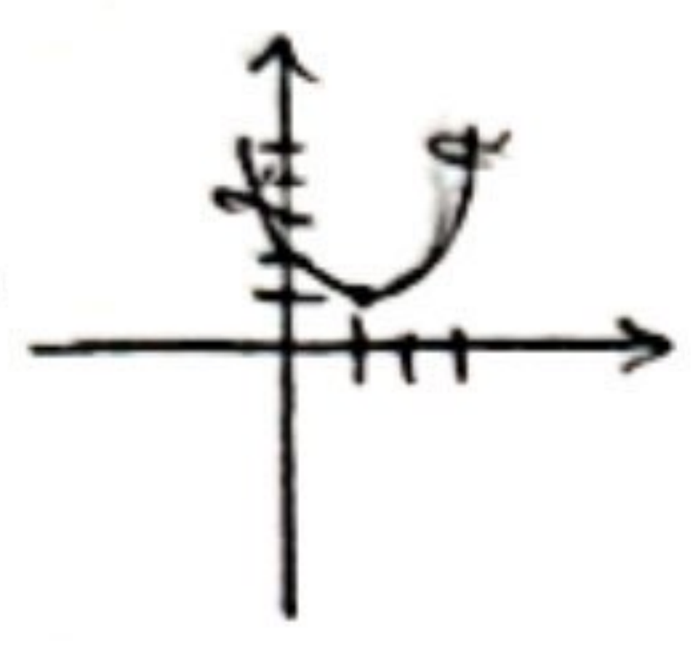
$\Rightarrow y^2-6y+(25-4m)\geq 0 \xrightarrow{x=-\frac{b}{2a}=3} 9-18+(25-4m)\geq 0 = -4m+16\geq 0 \rightarrow m\leq 4 \rightarrow x\neq -1,$

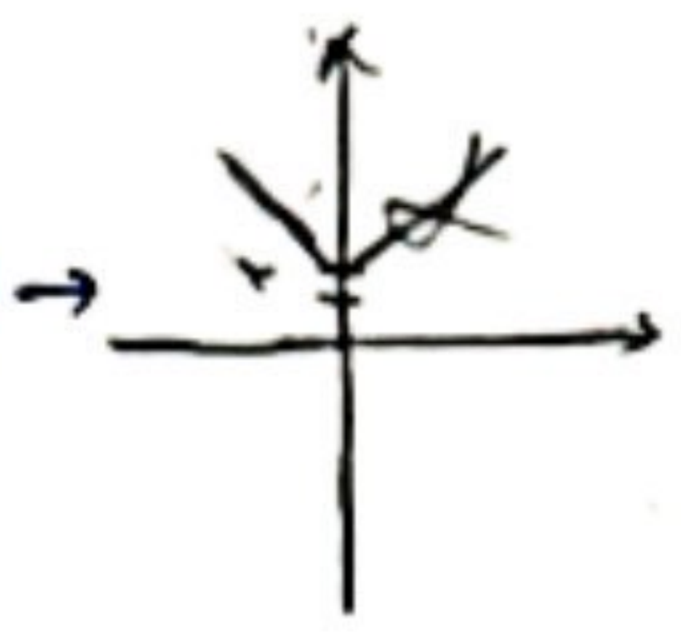
$(m=4)$ → [illegible] نباشد → ۳ مقدار طبیعی برای m وجود دارد → $\{1,2,3\}$ → (۳) → جواب

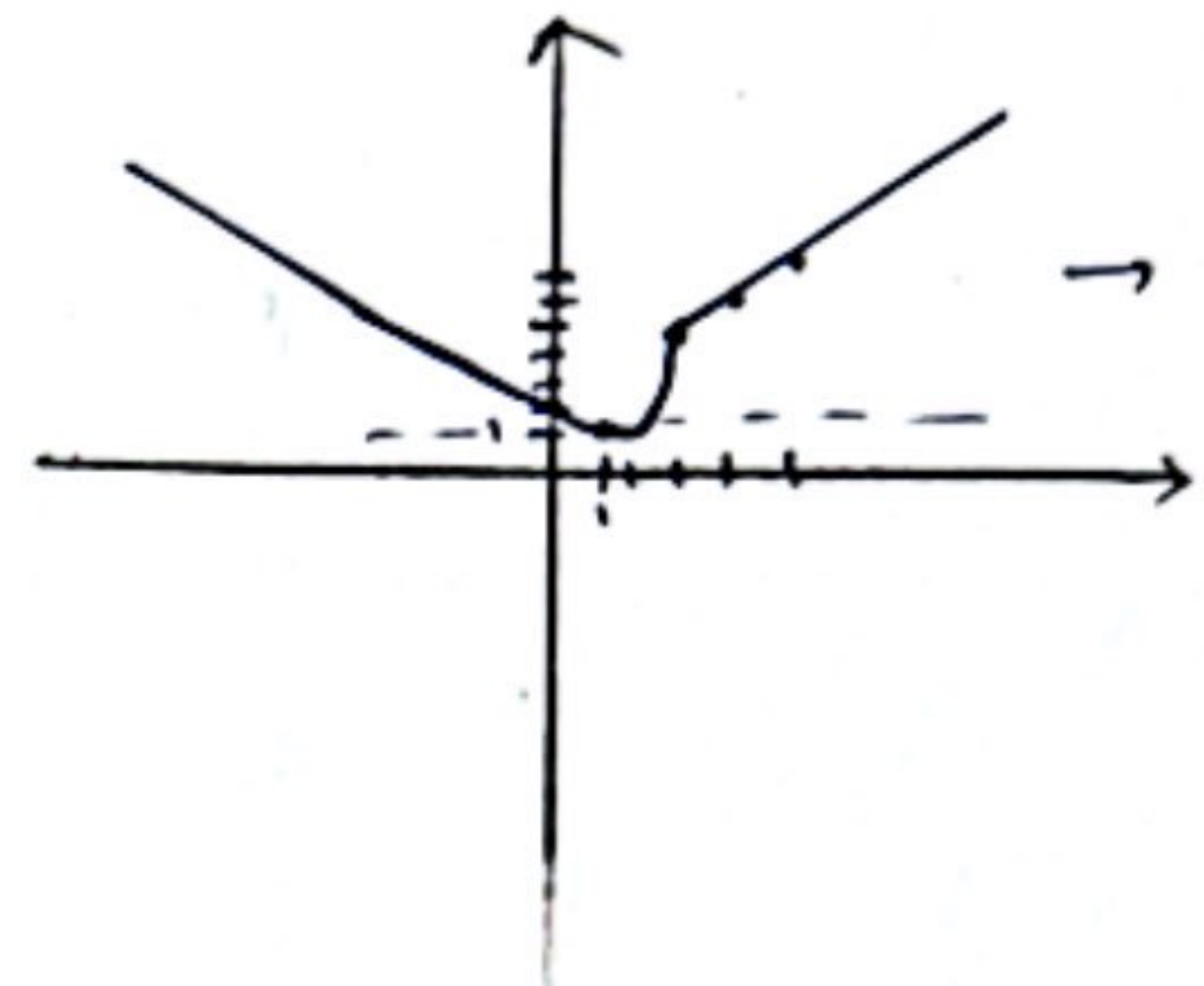
↳ زیرا: $\frac{x^2+5x+4}{x+1} \rightarrow \frac{(x+1)(x+4)}{(x+1)} \rightarrow x\neq -1$

۷

$f(x)=\begin{cases} x+2 \ ; \ x\geq 3 \Rightarrow x=3 \rightarrow y=5, \ x=4 \ y=6, \ x=5 \rightarrow y=7 \\ x^2-2x+2 \ ; \ 0\leq x<3 \rightarrow x=\frac{-b}{2a}=1, \ y=1 \ (a) \\ |x|+2 \ ; \ x<0 \rightarrow (b) \end{cases}$

(a) → 

(b) → 

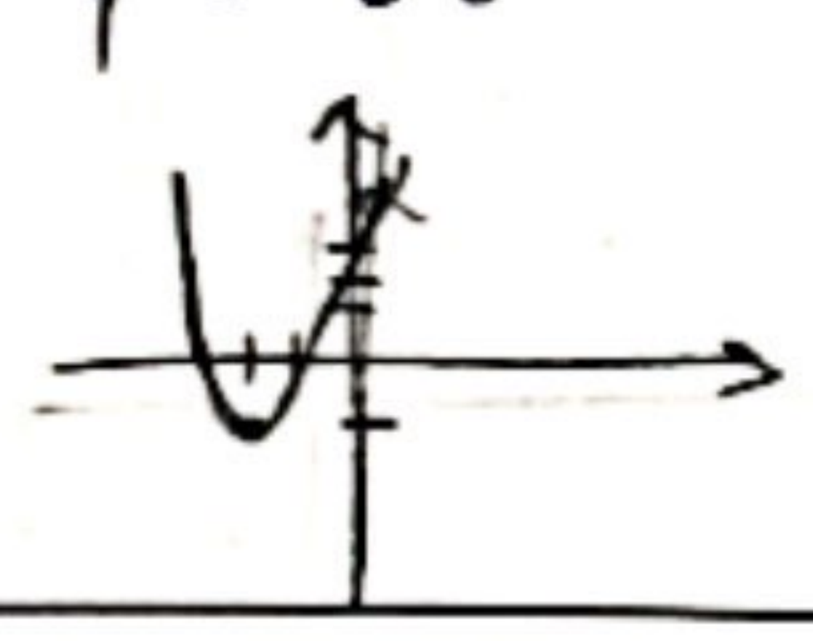


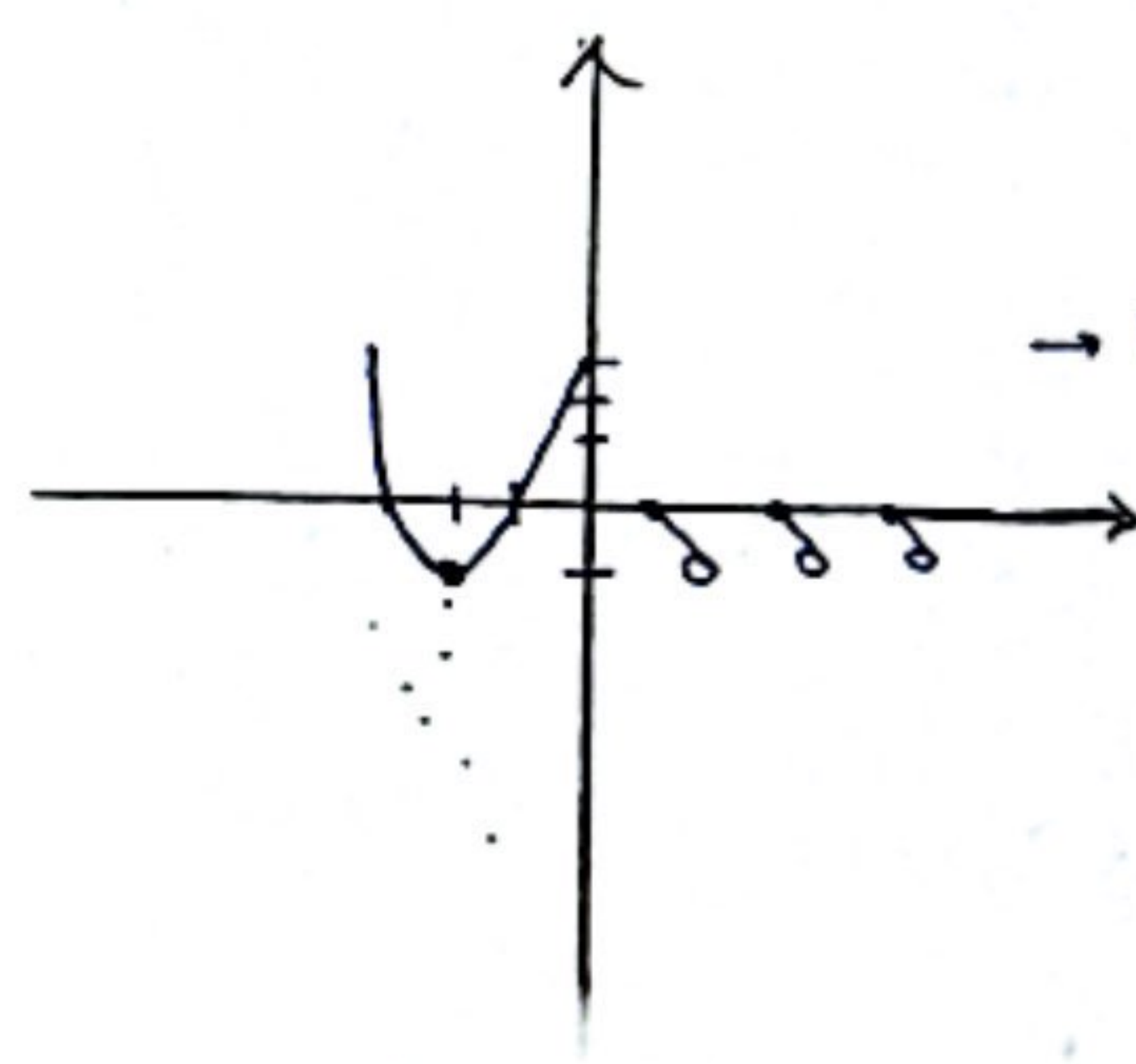
→ $R_f=[1,+\infty)$ ← جواب

۸

$f(x)=\begin{cases} x^2+4x+3 \ ; \ x\leq 0 \rightarrow x=-\frac{b}{2a}=-2, \ y=-1 \ (a) \\ [2x]-2x \ ; \ x>0 \rightarrow \end{cases}$ همه‌ی دوره‌ها باز $(-1,0]$

$* \ y=[x]-x$

(a) → 



→ $R_f=[-1,+\infty)$ ← جواب

۹

$y=a+1-\sqrt{2x+3}$

$D_f=[b,+\infty) \rightarrow 2x+3\geq 0 \rightarrow 2x\geq -3 \rightarrow x\geq -\frac{3}{2} \Rightarrow b=-\frac{3}{2} \rightarrow D_f=[-\frac{3}{2},+\infty)$

$R_f=(-\infty,5]$

$x=-\frac{3}{2}, \ y=5 \rightarrow 5=a+1-\sqrt{2\times -\frac{3}{2}+3} \Rightarrow 5=a+1 \rightarrow a=4$

$ab=-\frac{3}{2}\times 4=(-6)$ → جواب

۱۰

$f(x)=2\sqrt{x+1}+4\sqrt{x+1}$

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

$\frac{f}{2}-\frac{f}{3}-\frac{g(x)}{3} \rightarrow \frac{f}{2}-(\frac{f}{3}+\frac{g(x)}{3}) \rightarrow \sqrt{x+1}+2\sqrt{1-x}-(\sqrt{2+2\sqrt{1-x^2}}) \rightarrow$

$-1 \rightarrow 2\sqrt{2}-\sqrt{2}=\sqrt{2}$

$1 \rightarrow \sqrt{2}-\sqrt{2}=0 \rightarrow R=[0,\sqrt{2}] \rightarrow$ جواب