نام و نام خانوادگی ...[illegible]... پاسخنامه تشریحی تکلیف شماره ...۸... کلاس ...یازدهم تجربی...

۱

$y = \{(-1,1),(0,4),(2,0),(1,2)\}$, $f(x) = \sqrt{1-x^2}$

$2y = \{(-1,2),(0,8),(2,0),(1,4)\}$ $D_f = [-1,1]$

$f(-1)=0 \to 3f(-1)=0$

$f(1)=0 \to 3f(1)=0$

$f(0)=1 \to 3f(0)=3$

$2g - 3f \xrightarrow{D_g \cap D_f} = \{(-1,2),(0,5),(1,4)\}$

$D_g \cap D_f = \{-1, 0, 1\}$

مجموع اعضای برد $= 2+5+4 = \boxed{11}$

۲

$f(x) = 2x-1 \to D_f = [3,+\infty)$, $3 \le x$

$3 \le x \to 5 \le 2x-1 \to R_f = [5,+\infty)$

$g(x) = \frac{1}{3}x+3 \to D_g = (-\infty,3]$, $x \le 3$

$x \le 3 \to \frac{1}{3}x \le 1 \to \frac{1}{3}x+3 \le 4 \to R_g = (-\infty,4]$

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

۳

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

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

$-x^2 + 2x + 3 > 0$

$x^2 - 2x - 3 < 0$

$(x-3)(x+1) < 0$, 3 , -1

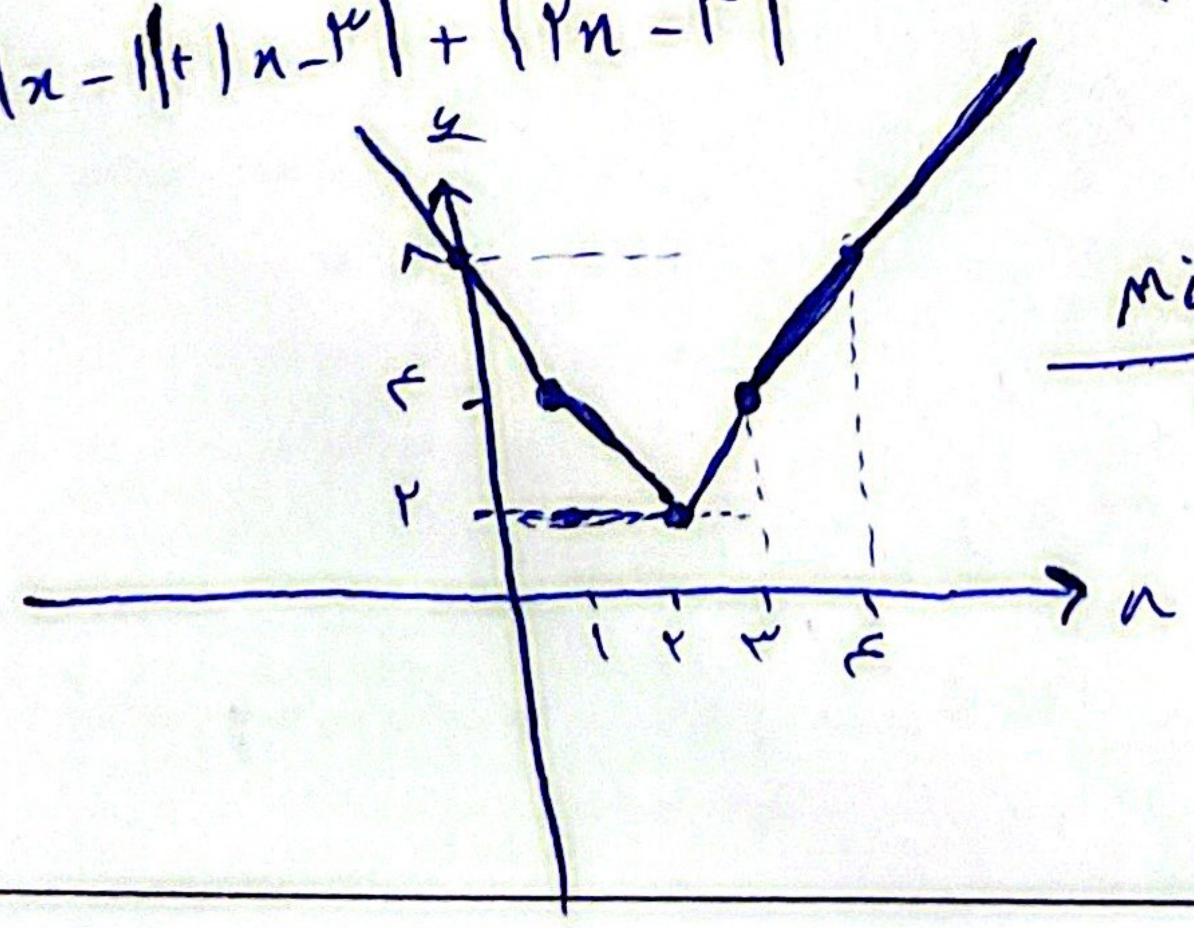
-1		3	
$+$	$-$		$+$

$x \in (-1,3)$

$\sqrt{b-a}_{max} \xrightarrow{b-a_{max}} b=3, a=-1 \to \boxed{\sqrt{4}=2}$

۴

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

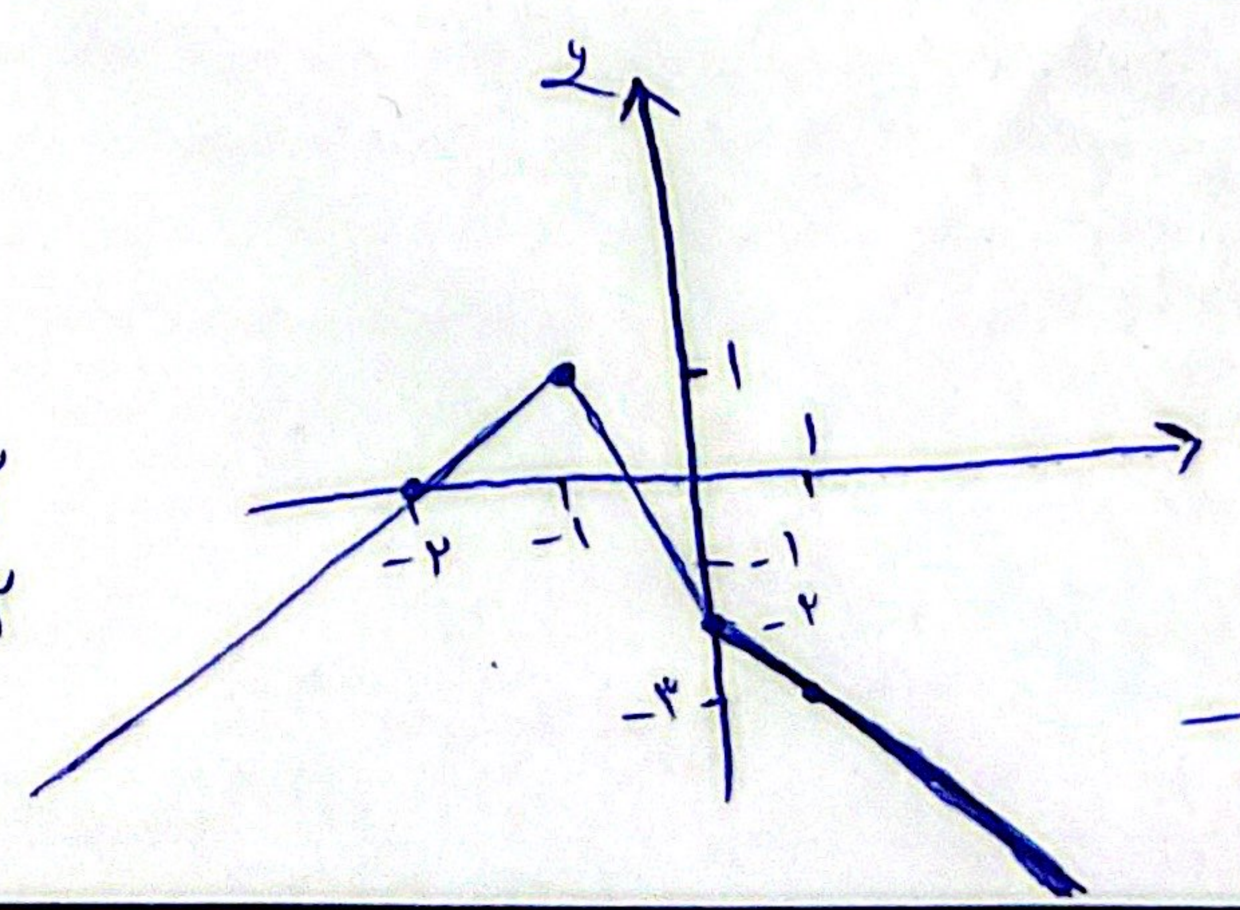


$\xrightarrow{min} 2 \to \boxed{f_{min} = 2}$

۵

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

	-1		0	
$-x+\cancel{2x}+2$		$-x-\cancel{2x}-2$		$x-\cancel{2x}-2$
$x+2$		$-3x-2$		$-x-2$



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

$$f(x) = \begin{cases} x+2 & ; x \geq 3 \\ x^2-2x+2 = (x-1)^2+1 & ; 0 \leq x < 3 \\ |x|+2 & ; x<0 \end{cases}$$

$\longrightarrow x \geq 3 \longrightarrow x+2 \geq 5$ ①

$\longrightarrow 0 \leq x < 3 \longrightarrow -1 \leq x-1 < 2 \longrightarrow 0 \leq (x-1)^2 < 4 \longrightarrow 1 \leq (x-1)^2+1 < 5$ ②

$\longrightarrow x<0 \longrightarrow |x|>0 \longrightarrow |x|+2>2$ ③

$1 \cup 2 \cup 3 \longrightarrow R_f =$

$R_f = [1, +\infty)$ ۷

$$f(x) = \begin{cases} x^2+4x+3 = (x+2)^2-1 & ; x \leq 0 \\ [2x]-2x & ; x>0 \end{cases}$$

$\longrightarrow x \leq 0 \longrightarrow x+2 \leq 2 \longrightarrow (x+2)^2 \geq 0 \longrightarrow (x+2)^2-1 \geq -1$ ①

$[2x]-2x$ ۸

$2x = a \longrightarrow [a]-a \longrightarrow R = (-1, 0]$ ② $\xrightarrow{1 \cup 2} R_f = [-1, +\infty)$

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

$2x+3 \geq 0 \longrightarrow x \geq -\frac{3}{2}$

$D_f = [-\frac{3}{2}, +\infty) \longrightarrow b = -\frac{3}{2}$

$ab = -6$ ۹

$R_f = (-\infty, a+1]$

$a+1 = 5 \longrightarrow a = 4$

$\sqrt{2x+3} \geq 0 \longrightarrow -\sqrt{2x+3} \leq 0 \longrightarrow a+1-\sqrt{2x+3} \leq a+1$

$f(x) = 2\sqrt{x+1} + 4\sqrt{1-x} \longrightarrow D_f = [-1, 1]$

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

$\sqrt{x+1} = a$

$\sqrt{1-x} = b$

$a+b > 0$

$= \frac{f(x)}{6} - \frac{g(x)}{3} \longrightarrow y = \frac{f(x)}{6} - \sqrt{2+2\sqrt{1-x^2}} + \frac{f(x)}{3}$ ۱۰

$D = [-1, 1]$ $\quad \frac{f(x)}{2} - \sqrt{2+2\sqrt{1-x^2}} = \cancel{\sqrt{x+1}} + 2\sqrt{1-x} - \sqrt{1+x+1-x+2\sqrt{1-x^2}}$

$a+2b - \sqrt{a^2+b^2+2ab} = b = \sqrt{1-x}$

$|a+b| = a+b$ $\quad D = [-1, 1]$ $\quad \sqrt{[0, 2]} \longrightarrow R = [0, \sqrt{2}]$

$y = \frac{x^2+5x+m}{x+1}$

$yx + y = x^2+5x+m$

$x^2 + (5-y)x + m - y = 0$ ۶

شرط وجود $: \Delta \geq 0 \longrightarrow (5-y)^2 - 4m + 4y \geq 0$

$y^2 - 10y + 25 - 4m + 4y \geq 0 \longrightarrow y^2 - 6y + 25 - 4m \geq 0$

$R_f = \mathbb{R} \Rightarrow \Delta \leq 0, \ a>0 \longrightarrow 36 - 100 + 16m \leq 0 \longrightarrow m \leq 4$

$\{m \mid m < 4, m \in \mathbb{N}\} = \{1, 2, 3\}$

$m = 4 \longrightarrow y = \frac{x^2+5x+4}{x+1} = x+4$

$R_f = \mathbb{R} - \{3\}$

m نمی‌تواند ۴ باشد.