نام و نام خانوادگی ......هستی حبیبی...... پاسخنامه تشریحی تکلیف شماره ..۸.... کلاس ...دهم ریاضی ۸...

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$g(x)=\{(-1,1),(0,4),(2,5),(1,2)\}$

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

$\Rightarrow 2g-3f=?\ : \begin{cases} 2g=\{(-1,2),(0,8),(2,10),(1,4)\} \\ 3f=\{(-1,0),(0,3),(1,0)\} \end{cases} \Rightarrow 2g-3f=\{(-1,2),(0,5),(1,4)\}$

$\Rightarrow R_f=\{2,4,5\} \to 2+4+5=11$

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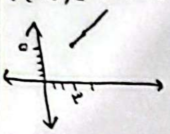
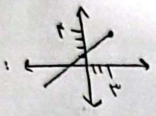
$f(x)=2x-1$ $\qquad g(x)=\frac{1}{3}x+3$





$D_f=[3,+\infty)\ ,\ D_g=(-\infty,3]$

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

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$y=\frac{-x^2}{2}+x+3\ :\ \frac{-x^2}{2}+x+3>\frac{3}{2} \xrightarrow{\times 2} -x^2+2x+6>3\ :\ x^2-2x-3<0$

$x=-1,3\ ;\ \begin{array}{c|c|c} & -1 \quad 3 & \\ + & - & + \end{array} \to (-1,3)$

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

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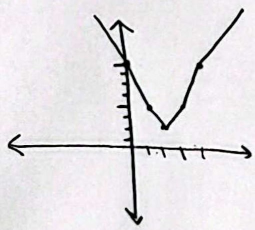
$y=|x-1|+|x-3|+|2x-4| \Rightarrow$ کمترین مقدار $=?$

$1 \qquad 3 \qquad 2$

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



$\Rightarrow R_f=[2,+\infty)$

$\Rightarrow 2$: جواب

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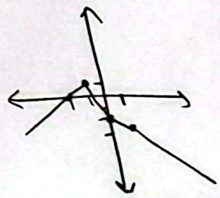
$y=|x|-2|x+1| \longrightarrow R_f=?$

$0 \qquad -1$

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



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

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$y = \dfrac{x^2+5x+m}{x+1} \to R_f = \mathbb{R} \Rightarrow yx + y = x^2 + 5x + m \to x^2 + (5-y)x + (m-y) = 0$

$x \Rightarrow \dfrac{-5+y \pm \sqrt{(5-y)^2 - 4(m-y)}}{2} \xrightarrow{25-10y+y^2-4m+4y} = \dfrac{-5+y \pm \sqrt{y^2-6y-4m+25}}{2} \Rightarrow \geq 0 : y^2 - 6y + (-4m+25) \geq 0$

$\Rightarrow \begin{cases} a > 0 \\ \Delta \leq 0 \end{cases}$

$\Rightarrow 36 - 4(25-4m) \leq 0 \to 36 - 100 + 16m \leq 0$

$\Rightarrow 16m - 64 \leq 0 \to m - 4 \leq 0 \to \underline{m \leq 4} \Rightarrow (-\infty, 4] \to$ طبیعی $: \{1, 2, 3, 4\} \Rightarrow$ ۴تا

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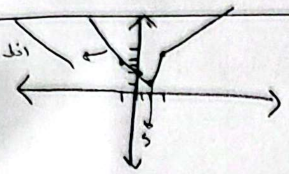
$f(x) = \begin{cases} x+2 & : x \geq 3 \\ x^2-2x+2 & : 0 \leq x < 3 \\ |x|+2 & : x < 0 \end{cases} \Rightarrow$



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

$\Rightarrow x^2 - 2x + 2 : \xrightarrow{x=3} 9 - 6 + 2 = \underline{5}$

$\xrightarrow{x=0} 2 \quad , \dfrac{-b}{2a} = \dfrac{2}{2} = 1$

$\Rightarrow |x| + 2 \to \underline{x=0} \Rightarrow 2$

$\xrightarrow{x=-1} 3$

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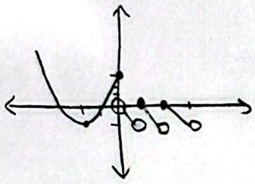
$f(x) = \begin{cases} x^2+4x+3 & : x \leq 0 \\ [2x] - 2x & : x > 0 \end{cases} \to R_f = ?$

$R = (-1, 0]$

$\dfrac{-b}{2a} = -2$

-1

$\to x = 0 : 3$



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

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$y = a + 1 - \sqrt{2x+3} \Rightarrow \begin{cases} D_f = [b, +\infty) \\ R_f = (-\infty, 5] \end{cases} \Rightarrow ab = ?$

بیشترین

$\Rightarrow a + 1 - \sqrt{2x+3} = 5 \Rightarrow a - \underbrace{\sqrt{2x+3}}_{0} = 4 \to \underline{a = 4} \quad , \quad 2x + 3 \geq 0$

$\to \underline{x \geq -\frac{3}{2}}$

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

$\Rightarrow ab = 4 \times \dfrac{-3}{2} = \underline{-6}$

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$f(x) = 2\sqrt{x+1} + 4\sqrt{1-x}$; $\underline{x \geq -1}$, $\underline{x \leq 1} \overset{\cap}{\Rightarrow} [-1, 1]$ / $f(x) + g(x) = 3\sqrt{2 + 2\sqrt{1-x^2}}$; $\sqrt{1-x}, \sqrt{x+1}$

$\Rightarrow 3\sqrt{2 + 2\sqrt{1-x} \times \sqrt{x+1}} \Rightarrow 3\sqrt{(1-x) + (1+x) + 2\sqrt{1-x} \times \sqrt{x+1}} = 3\sqrt{\left((\sqrt{1-x}) + (\sqrt{x+1})\right)^2} \Rightarrow 3\sqrt{x+1} + 3\sqrt{1-x}$

$1 + 1 + x - x$

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

$\Rightarrow D_f = D_g \to = [-1, 1] \Rightarrow$ ✓ / $y = \dfrac{f(x)}{6} - \dfrac{g(x)}{3} = ? \to \dfrac{f(x) - 2g(x)}{6} = \dfrac{(2\cancel{\sqrt{x+1}} + 4\sqrt{1-x}) - (2\cancel{\sqrt{x+1}} - 2\sqrt{1-x})}{6}$

$\Rightarrow \dfrac{\sqrt{1-x}}{6} \to x \leq 1 \quad : R_f = \dfrac{[0, +\infty)}{6}$

$D_f = (-\infty, 1]$