

$f(x) = \sqrt{1-x^2} \rightarrow D_f = [-1, 1]$
 $D_g = \{-1, 0, 1, 2\} \rightarrow n \rightarrow \{-1, 0, 1\}$ (17, 20)
 سوال (2)

$\rightarrow R_g \circ R_f = \{(-1, f(1) - f(0)) (0, f(2) - f(1)) (1, f(2) - f(0))\} \rightarrow \{(-1, 2) (0, 0) (1, 2)\} \rightarrow 2+2+0 = 4$

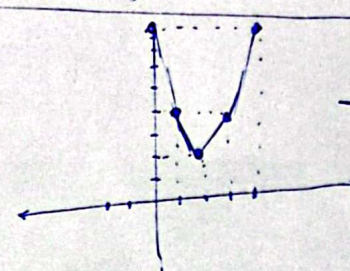
$f(x) = x-1 \quad D_f = [2, +\infty) \rightarrow f(2) = 0 \sim R_f = [0, +\infty)$ سوال (2)

$g(x) = \frac{1}{x} x + 2 \quad D_g = (-\infty, 2] \rightarrow g(2) = 2 \sim R_g = (-\infty, 2] \cup [2, +\infty)$

$\frac{-x^2 + x + 2}{x} > \frac{2}{x} \rightarrow -x^2 + x + 2 > 2 \rightarrow x^2 - x - 2 < 0 \rightarrow (x-2)(x+1) < 0$
 $\frac{-1}{x} \frac{2}{x} + \frac{1}{x} \frac{2}{x}$ سوال (2)

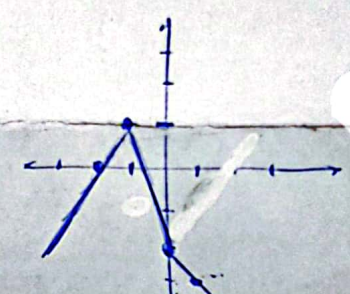
$\sqrt{x-(-1)} = \sqrt{x+1} = 2$
 $a = -1, b = 2$
 $y = |x-1| + |x-2| + |x-3|$

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

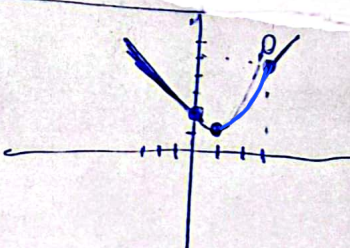

 $\rightarrow \text{نقطهٔ مینیمم} = 2$ سوال (2)

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

-1	0
$x+1$	$-x-1$
$ x+1 $	$ x+1 $

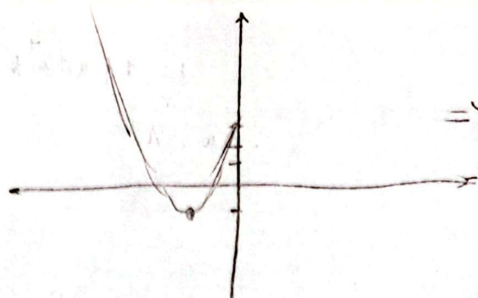

 $R = (-\infty, 1]$ سوال (2) (1, 70)

$y = \frac{x^2 + 2x + m}{x+1}$
 $1+m=0 \rightarrow m = -1$
 $\begin{cases} a > 0 \rightarrow 1 > 0 \\ \Delta < 0 \rightarrow m < 4 \end{cases} \rightarrow m = 1, 2, 3$
 $x^2 + (2-y)x + m-y = 0 \rightarrow x = \frac{y-2 \pm \sqrt{(2-y)^2 - 4(m-y)}}{2}$
 $y^2 - 4y + 2a - 4m > 0$
 m نمرات از 0 تا 4 باشد

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

 $\rightarrow R_f = [1, +\infty)$ سوال (2)

$$f(x) = \begin{cases} x^2 + 5x + 3 & x \leq 0 \\ [x] - 2x & x > 0 \end{cases}$$

$$-1 \leq [x] - 2x < 1 \Rightarrow -1 < [x] - x \leq 0$$



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

آینا ترم اول

سوال 5

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$$y = a + 1 - \sqrt{x+3} \rightarrow D_y = [b, +\infty)$$

$$x+3 \geq 0 \rightarrow x \geq -3 \rightarrow \boxed{b = -3}$$

$$R_y = (-\infty, 0]$$

$$a+1-0=0 \Rightarrow a=-1$$

$$\rightarrow -\frac{1}{x} \times 4 = \frac{-4}{x}$$

سوال 9

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$$f(x) = 2\sqrt{x+1} + 4\sqrt{1-x} \rightarrow D_f = -1 \leq x \leq 1 \quad D = [-1, 1]$$

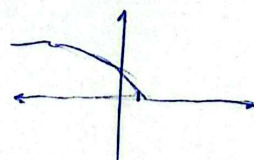
$$f(x) + g(x) = 2\sqrt{x+1} + 4\sqrt{1-x} = 2\sqrt{(1-x)+1} = 2\sqrt{2-2x} = 2\sqrt{2}\sqrt{1-x} = 2\sqrt{1-x} + 2\sqrt{1+x}$$

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

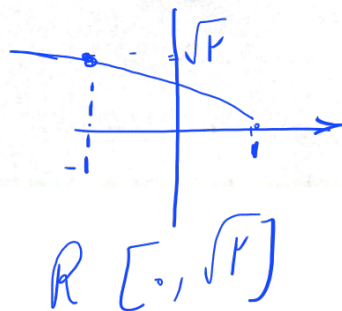
$$y = \frac{f(x)}{4} - \frac{g(x)}{2} = \frac{f(x) - 2g(x)}{4}$$

$$\rightarrow \frac{2\sqrt{x+1} + 4\sqrt{1-x} - 2\sqrt{1+x} - 2\sqrt{1-x}}{4}$$

$$\rightarrow \frac{4\sqrt{1-x}}{4} \rightarrow y = \sqrt{1-x}$$



$$R_y = [0, +\infty)$$



سوال 15

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