

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره: کلاس: پایه:	
$rg = \{(-1, 2), (0, 1), (2, 0), (1, 2)\}$ $\sqrt{1-x^2} = 0 \Rightarrow 1-x^2 \geq 0$ $(1-x^2) = 0 \Rightarrow x = \pm 1$ $\Rightarrow \sqrt{1-x^2} \Rightarrow [0, 1]$ $f = \{(-1, 0), (0, 1), (1, 0)\} = 0 \Rightarrow f = \{(-1, 0), (0, 1), (1, 0)\}$ $rg \cdot rf = \{(-1, 2), (0, 1), (1, 2)\} \Rightarrow Rf = \{x, \omega, \epsilon\}$ $x + \omega + \epsilon = 11$	۱
$f(x) = 2x - 1 \rightarrow x = 2 \Rightarrow y = 3 \Rightarrow y \in [3, +\infty)$ $Df = [2, +\infty)$ $g(x) = \frac{1}{x} + 2 \Rightarrow Dg = (-\infty, 2] \Rightarrow x = 2 \rightarrow (-\infty, 2]$ $Rf \cup Rg = (-\infty, 2] \cup [3, +\infty)$	۲
$-\frac{x^2}{r} + x + r > \frac{r}{r} \Rightarrow -\frac{x^2}{r} + x > -\frac{r}{r} + \frac{x^2}{r} - \frac{r}{r} < 0$ $x^2 - rx - r < 0 \Rightarrow (x+1)(x-r) < 0 \Rightarrow \frac{1}{x+1} < \frac{r}{x-r} \Rightarrow (-1, r)$ $\sqrt{b-a} = \sqrt{c} = r$	۳
$y = x-1 + x-2 + x-3$ $\begin{cases} 1 \leq x < 2 & -2x+5 \\ 2 \leq x < 3 & x+2 \\ x \geq 3 & 3x-1 \\ x < 1 & -x+4 \end{cases}$ $\begin{matrix} x \geq 1 & y \geq 2 \\ x = 2 & y = 2 \\ x = 3 & y = 2 \end{matrix} \rightarrow \text{نقطهٔ مینیمم}$	۴
$x \begin{cases} \rightarrow 0 \\ \rightarrow -1 \end{cases}$ $\begin{cases} x > 0 & x - 2x - 2 = -x - 2 \\ -1 \leq x \leq 0 & -x - 2x - 2 = -3x - 2 \\ x < -1 & -x + 2x + 2 = x + 2 \end{cases}$ $Rf = (-\infty, 1]$	۵

$$xy + y^2 = x^2 + a + m \Rightarrow x^2 + (a - y)x + (m - y) = 0 \quad \Delta \geq 0$$

$$(a - y)^2 - 4(m - y) \geq 0 \Rightarrow 4a^2 + y^2 - 4ay - 4m + 4y \geq 0 \Rightarrow y^2 - 4y + 4a - 4m \geq 0$$

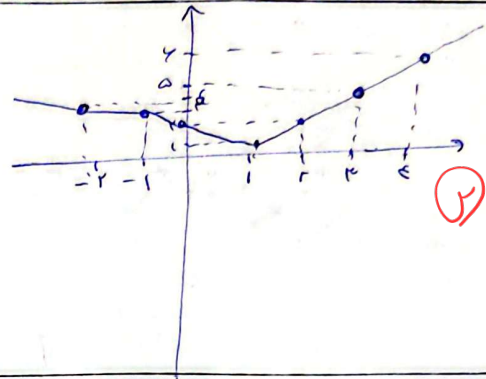
$$\Rightarrow \Delta = 16 - 4(4a - 4m) \leq 0 \Rightarrow 4 \geq m$$

$$m \leq 4 \Rightarrow \frac{x + a + 4}{x + 1} = x + 4 \Rightarrow \frac{x + 1}{x} \Rightarrow m = \{b, 4, 4\}$$

$\frac{1}{x} = 2 \Rightarrow x = \frac{1}{2}$

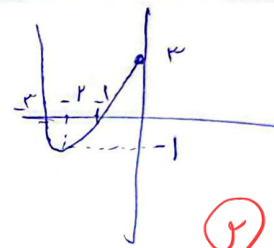
$$f(x) = \begin{cases} x + 4 & x \geq 4 \\ x^2 - 4x + 4 & 0 \leq x < 4 \\ |x| + 4 & x < 0 \end{cases}$$

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



$$f(x) = \begin{cases} x^2 + 6x + 4 & x \leq 0 \\ [4x] - 4x & x > 0 \end{cases}$$

$\hookrightarrow -1 \leq [4x] - 4x < 0 \Rightarrow D = [-1, 0]$



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

$$y = a + 1 - \sqrt{4x + 4} \quad D = [b, +\infty) \quad R = [-\infty, a]$$

$$4x + 4 \geq 0 \Rightarrow 4x \geq -4 \Rightarrow x \geq -1, a \quad b = -1, a$$

$$ab = -4$$

if $b = -1, a \Rightarrow \sqrt{0} = 0$

$$f(x) = 4\sqrt{x+1} + 4\sqrt{1-x} = \sqrt{4x+4} + \sqrt{14-14x}$$

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

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

$$y = \sqrt{x+1} + \sqrt{1-x} - \sqrt{4+4\sqrt{1-x^2}} \Rightarrow -1 \leq y \leq 1$$

$x = -1 \quad y = \sqrt{2}$
 $x = 1 \quad y = 0$
 $x = 0 \quad y = 1$

$$R_f = [0, \sqrt{2}]$$