

W, 20

3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

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

$$g = \{(-1, 1), (0, \varepsilon), (1, 0), (1, 2)\} \rightarrow \mathcal{R}_g = \{(-1, 2), (0, 1), (1, 0), (1, \varepsilon)\}$$

$$\mathcal{R}_g = \mathcal{R}_f = \{(-1, 2), (0, 1), (1, 2)\} \rightarrow \mathcal{R}_f \cap \mathcal{R}_g = \{1\}$$

$$\mathcal{R}_f = \{(-1, 2), (0, 1), (1, 2)\} \quad \mathcal{R}_g = \{(-1, 2), (0, 1), (1, 2)\}$$

$$f(x) = x-1$$

$$\mathcal{D}_f = [1, +\infty)$$

$$\rightarrow f(x) = 1 = a \rightarrow \mathcal{R}_f = [a, +\infty)$$

$$\mathcal{R}_f \cup \mathcal{R}_g = \mathcal{R} = [1, +\infty)$$

$$g(x) = \frac{1}{x} x + 1$$

$$\mathcal{D}_g = (-\infty, 1]$$

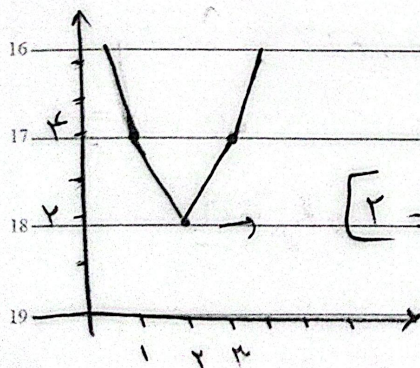
$$\rightarrow \frac{1}{x}(1) + 1 = \varepsilon \rightarrow \mathcal{R}_g = (-\infty, 1]$$

$$-x^2/x + x + 1 \geq 1/x \rightarrow -x^2 + x + 1 \geq 1/x \rightarrow -x^2 + x + 1 \geq 0 \rightarrow -x^2 + x + 1 \geq 0$$

$$\sqrt{5-a} = \sqrt{1-(-1)} = \sqrt{2} = 1 \quad a = -1 \quad b = 1 \quad \mathcal{R} = (-1, 1]$$

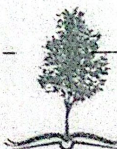
$$y = |x-1| + |x-2| + |x-3|$$

$$\begin{array}{c|c|c|c} x & 1 & 2 & 3 \\ \hline -x+1-x+2-x+3 & x-1-x+2 & x-1-x+2 & x-1-x+2 \\ \hline -x+6 & 1 & 1 & 1 \\ \hline \end{array}$$



$$\mathcal{R} = [1, +\infty)$$

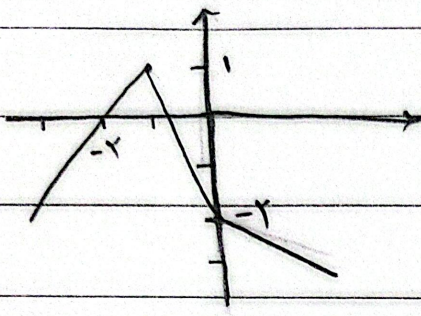
5



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

$$\begin{array}{c|c|c} -1 & 0 & \\ \hline -x+2x+2 = & -x-2x-2 = & x-2x-2 = \\ x+2 & -3x-2 & -x-2 \end{array}$$

(1) (-2)



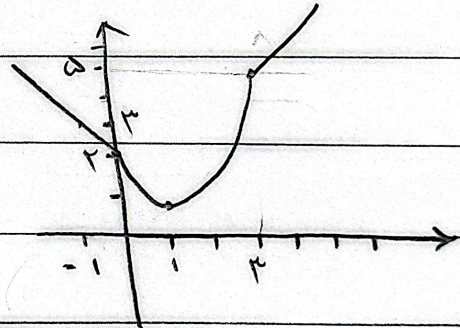
$$R = [-\infty, 1)$$

1, 10

فرض کنیم $x = m$ و ϵ را به گونه ای انتخاب کنیم که $\epsilon < 1$ و $\epsilon < 2$ باشد.

$$(1) : x^c + \epsilon x + \epsilon = (x+1)(x+2) \rightarrow m = \epsilon$$

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



$$A : \frac{-b}{2a} = \frac{2}{2} = 1$$

$$\rightarrow (1, 1)$$

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

$$\rightarrow (1)^c + 2(1) + \epsilon = 1$$

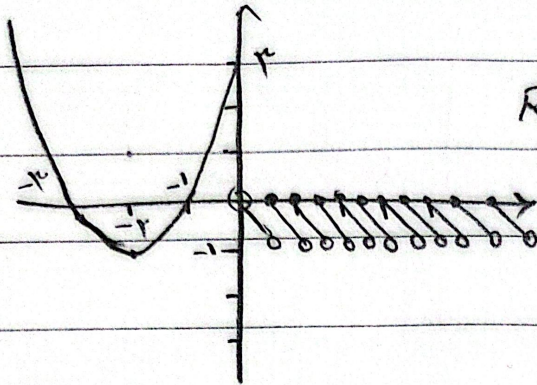
$$f(x) = \begin{cases} [2x] - 2x & ; x > 0 \rightarrow [0, -1) \\ x^c + \epsilon x + \epsilon^* & ; x \leq 0 \end{cases}$$

$$* : \frac{-b}{2a} = \frac{-\epsilon}{2} = -\frac{\epsilon}{2}$$

$$\rightarrow (-\frac{\epsilon}{2}, -1) \rightarrow R_f = [-1, +\infty)$$

$$(-\frac{\epsilon}{2})^c + \epsilon(-\frac{\epsilon}{2}) + \epsilon = -1$$





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

$$y = a + 1 - \sqrt{2ae^x} \rightarrow 2ae^x > 0 \rightarrow 2a > -1 \rightarrow a > -1/2$$

$$D_f = [b, +\infty) = [-1/2, +\infty) \Rightarrow D_f = [-1/2, +\infty)$$

$$R_f = (-\infty, a] \Rightarrow b = -1/2$$

$$\hookrightarrow a = a + 1 \rightarrow a = -1$$

$$ab = -1/2, \varepsilon = -1$$

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

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

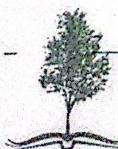
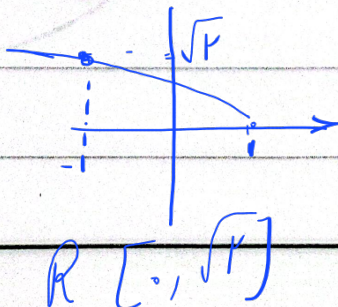
$$f(x) + g(x) - f(x) = g(x) = 2\sqrt{x+1} + 2\sqrt{1-x} - 2\sqrt{x+1} - \varepsilon\sqrt{1-x}$$

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

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

$$= \frac{2\sqrt{1-x}}{4} = \frac{\sqrt{1-x}}{2} = y \quad D = [-1, 1] \begin{cases} x > -1 \Leftrightarrow x+1 > 0 \\ x \leq 1 \Leftrightarrow -x+1 \geq 0 \end{cases}$$

$$\rightarrow R = 0$$



Senobar

$$R = [-1, 1/2]$$

$$x^2 + (a-y)x + m-y = 0 \rightarrow x = \frac{y-a \pm \sqrt{(a-y)^2 - 4(m-y)}}{2} \rightarrow \dots \quad (4)$$

$$\left\{ \begin{array}{l} ay > 0 \rightarrow 1 > 0 \\ \Delta < 0 \rightarrow m < 4 \rightarrow \end{array} \right.$$

$$\Delta < 0 \rightarrow m < 4 \rightarrow$$

m نمی تواند برابر 4 باشد

$$m = 1, 2, 3$$

$$\hookrightarrow y^2 - 4y + 4a - 4m > 0$$