

3. مطلوب: A مطلوب مطلوب مطلوب

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

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

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

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

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

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

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

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

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

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

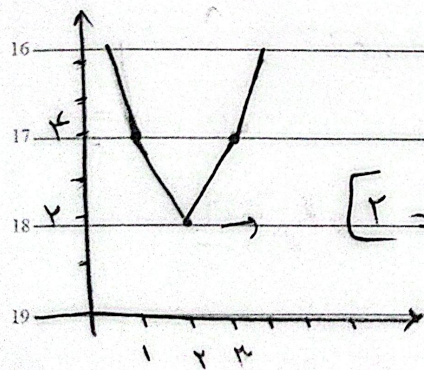
$$\rightarrow \frac{1}{x}(1) + 1 = \varepsilon \rightarrow \mathcal{R}_g = (-\infty, 1]$$

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

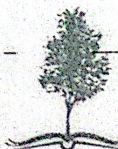
$$\sqrt{5-a} = \sqrt{1-(-1)} = \sqrt{2} = 1 \quad a = -1 \quad b = 1 \quad \mathcal{R} = (-1, 1)$$

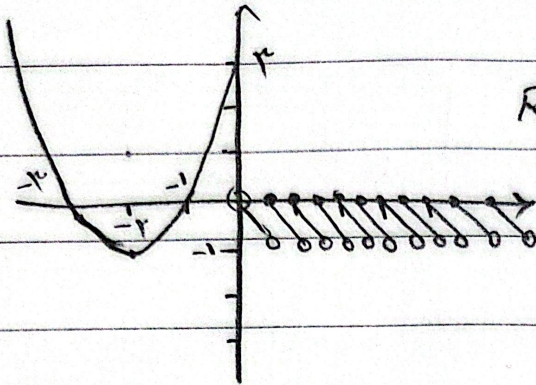
$$y = |x-1| + |x-2| + |x-3|$$

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



$$\mathcal{R} = \{1\}$$





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

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

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

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

$$\Delta = a + 1 \rightarrow a = \varepsilon$$

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

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

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

$$x+1+1-x+2\sqrt{1-x}$$

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

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

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

$$= \frac{2\sqrt{1-x}}{4} = \frac{\sqrt{1-x}}{2} = y$$

$$D = [-1, 1] \begin{cases} x \geq -1 \Leftrightarrow x+1 \geq 0 \\ x \leq 1 \Leftrightarrow -x+1 \geq 0 \end{cases} \text{ : sub}$$

$$\rightarrow R = 0$$

