

۱۷,۷۵

آیناز فرهنگ

$$g = \{(-1, 2), (0, 8), (2, 0), (1, 4)\}$$

$$f = \{(-1, 0), (0, 3), (1, 0)\}$$

$$\text{مجموع بردار} = 2 + 3 + 4 = 11$$

$$f = \{(-1, 0), (0, 1), (1, 0)\}$$

$$g - f = \{(-1, 2), (0, 7), (1, 4)\}$$

(۱)

(۲)

(۳)

(۴)

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

$$g(x) = \frac{1}{x} x + 3 \quad D_g = (-\infty, 2] \Rightarrow R_g = (-\infty, 4] \quad (2)$$

$$(1) \cup (2) = (-\infty, 4] \cup [0, +\infty)$$

$$y = \frac{-x^2}{x} + x + 3$$

$$(a \& b) = \frac{-x^2}{x} + x + 3 > \frac{x}{x} \rightarrow \frac{-x^2}{x} - \frac{x}{x} + x + 3 > 0 \rightarrow \frac{-x^2 - x}{x} + x + 3 > 0$$

$$-x^2 - x + 2x + 6 > 0 \rightarrow -x^2 + x + 6 > 0 \rightarrow x^2 - x - 6 < 0 \rightarrow (x - 3)(x + 2)$$

$$\Rightarrow \begin{array}{c} -1 \quad 3 \\ + \quad - \quad + \end{array} \Rightarrow \frac{a \quad b}{(-1 \quad 3)} \rightarrow \sqrt{3 - (-1)} = 2$$

(۵)

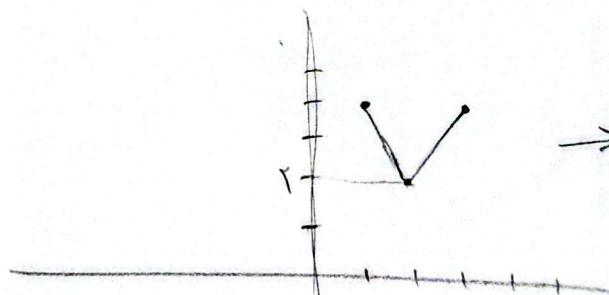
(۶)

$$x = 1 \rightarrow 4$$

$$x = 3 \rightarrow 4$$

$$x = 2 \rightarrow 2$$

(۷)

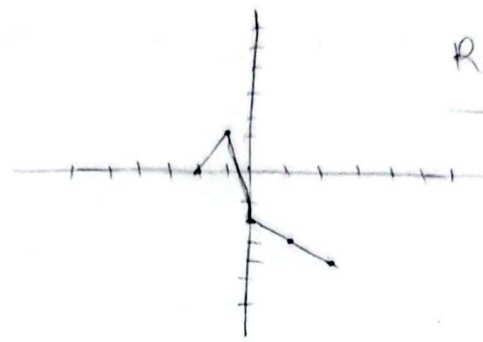


$$\rightarrow R_f = [2, +\infty)$$

(۸)

$$2 = \text{کترین مقدار} \leftarrow$$

$$\begin{aligned} x=0 &\rightarrow -2 \\ x=-1 &\rightarrow 1 \\ x=1 &\rightarrow -2 \\ x=2 &\rightarrow -4 \\ x=-2 &\rightarrow 0 \end{aligned}$$



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

(a)

(5)

$$y = \frac{x^2 + ax + m}{x+1} \Rightarrow yx + y = x^2 + ax + m \Rightarrow x^2 + (a-y)x + (m-y) = 0$$

(5)

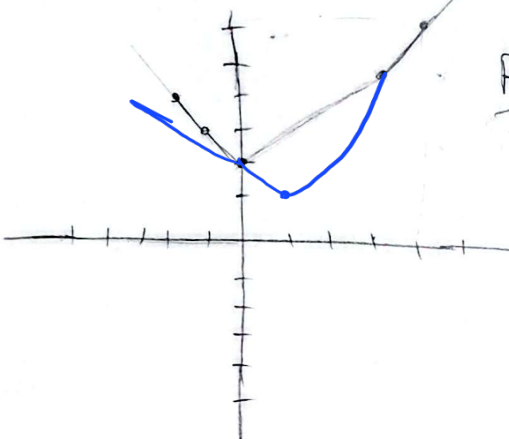
$$(a-y)^2 - 4(1)(m-y) \geq 0 \Rightarrow 2a + y^2 - 4y - 4m + 4y \geq 0$$

(1, 1.75)

$$y^2 - 4y + 2a - 4m + 4y \geq 0 \Rightarrow y^2 - 4y + 2a - 4m \geq 0 \Rightarrow 4y - 4(1)(2a - 4m) \geq 0$$

$$m = -f \rightarrow \frac{x+2a+f}{x+1} = x+f, \frac{x+1}{x+1} \text{ نمره IR}$$

$$\begin{aligned} 4y - 100 + 14m &\geq 0 \\ -4y &\geq -14m \Rightarrow 4y &\geq 14m \\ \Rightarrow 4 &\geq m \Rightarrow \{1, 2, 3, 4\} &= \text{اعداد طبیعی} \end{aligned}$$



$$R_f = [5, +\infty)$$

(v)

(1)

$$\begin{aligned} R_f &= \frac{-b}{2a} = \frac{-f}{2} = (-f) \\ (-1)^2 + f(-1) + f^2 &= f - 1 + f^2 = (-1) \\ \Rightarrow R_f &= [-1, +\infty) \end{aligned}$$

$$\begin{aligned} -1 &\leq [x] - x \leq 0 \\ f(x) &= \begin{cases} x^2 + f x + f^2 & x \leq 0 \\ [x] - x & x > 0 \end{cases} \Rightarrow \emptyset \end{aligned}$$

(5)

(1)

$$D_f = [b, +\infty) \quad \sqrt{4x+3} \geq 0 \rightarrow 4x+3 \geq 0 \quad x \geq -\frac{3}{4} \quad \left(x \geq -\frac{3}{4}\right) \Rightarrow b = -\frac{3}{4}$$

(9)

$$\text{if } b = -\frac{3}{4} \rightarrow y = a + 1 - \sqrt{4x+3} \rightarrow a + 1 = a \Rightarrow a = f$$

(5)

$$ab = f \times (-\frac{3}{4}) = -\frac{12}{4} = (-3)$$

$$f(x) = \sqrt{x+1} + \sqrt[3]{1-x}$$

$$g(x) = \sqrt[3]{2 + \sqrt{1-x^2}} - f(x)$$

$$\frac{f(x)}{4} - \frac{g(x)}{3} = \frac{f(x)}{4} - \sqrt[3]{2 + \sqrt{1-x^2}} + \frac{f(x)}{3}$$

$$\Rightarrow \frac{f(x)}{4} - \sqrt[3]{2 + \sqrt{1-x^2}}$$

$$\Rightarrow \frac{4\sqrt{x+1} + 1\sqrt[3]{1-x}}{4} - \sqrt[3]{2 + \sqrt{1-x^2}}$$

$$\Rightarrow \sqrt{x+1} + \sqrt[3]{1-x} - \sqrt[3]{2 + \sqrt{1-x^2}}$$

$$\Rightarrow \begin{aligned} x+1 \geq 0 &\rightarrow x \geq -1 \rightarrow [-1, +\infty) \\ 1-x \geq 0 &\rightarrow 1 \geq x \rightarrow -x \geq -1 \rightarrow x \leq 1 \rightarrow (-\infty, 1] \end{aligned} \cap \rightarrow [-1, 1]$$

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

$$f(m) + g(m) = \sqrt{1+m} + \sqrt[3]{1-m} \xrightarrow{\text{جذر می کشیم}} \sqrt[3]{1-m} + \sqrt{1+m}$$

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

$$\frac{f(x)}{4} - \frac{g(x)}{3} = \sqrt{1-x}$$

