

Subject:

Date 14.4.17, 5

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فاطمه مفتی - 8

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

$$f = \{(-1, 2), (0, 5), X, (1, 2)\} \Rightarrow 2g - 3f$$

$$\hookrightarrow 2g - 3f = \{(-1, -4), (0, -7), (1, -2)\}$$

$$f(x) = 2x - 1 \quad \begin{array}{l} [4, +\infty) \text{ دایره} \\ (1, 2) - 1 \end{array} \rightarrow R_f = [5, +\infty) \quad (2)$$

$$g(x) = \frac{1}{4}x + 3 \quad \begin{array}{l} (-\infty, 3] \text{ دایره} \\ (\frac{1}{4}, 2) + 3 \end{array} \rightarrow R_g = (-\infty, 4] \cup [5, +\infty)$$

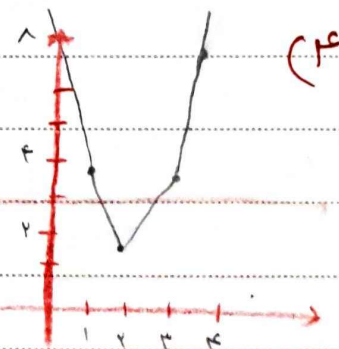
$$y = \frac{-x^2}{4} + x + 3 \rightarrow \text{ext} \quad \left| \begin{array}{l} -\frac{b}{4a} = 1 \\ y = -\frac{1}{4} + 1 + 3 = \frac{9}{4} \end{array} \right. \quad (3)$$

$$y = \frac{9}{4} \rightarrow -\frac{9}{4} = -x^2 + 4x \Rightarrow x^2 - 4x - \frac{9}{4} = 0 \Rightarrow x = -1, 3$$

$$b = 4, a = -1, a = 3 \Rightarrow \sqrt{b-a} = \sqrt{7} = 2$$

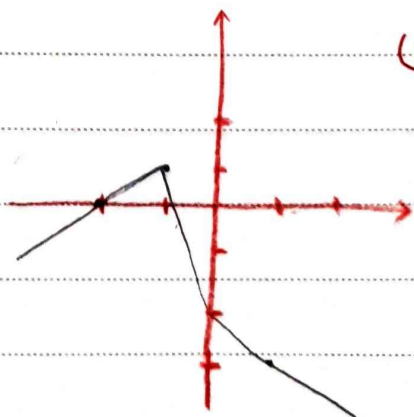
1	2	3
$-x + 1 - x + 3 - 2x + 4$	$x - 1 - x + 3 - 2x + 4$	$x - 1 - x + 3 - 2x + 4$
$-5x + 8$	$-2x + 6$	$-x + 6$
$-5x + 8$	$-2x + 6$	$-x + 6$

$$y_{\min} = 2$$



-1	0
$-x + 2x + 2$	$-x - 2x - 2$
$x + 2$	$-3x - 2$
$x + 2$	$-3x - 2$

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



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نمبر لکھنا

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

(5)

$$\hookrightarrow m = 1 \Rightarrow y = x + 1 \quad x \neq -1 \rightarrow y \neq 0 \Rightarrow m \neq 1$$

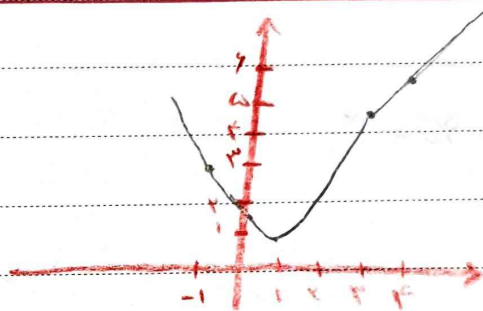
$$\hookrightarrow yx + y = ax + x^2 + m \Rightarrow x^2 + (a-y)x + m-y = 0 \rightarrow \Delta \geq 0$$

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

$$y=1 \Rightarrow 4(m-1) \geq 0 \Rightarrow m \leq 1 \rightarrow m = \{1, 2, 3\}$$

$$x^2 - 2x + 1 \rightarrow \frac{-b}{2a} = 1$$

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



(v)

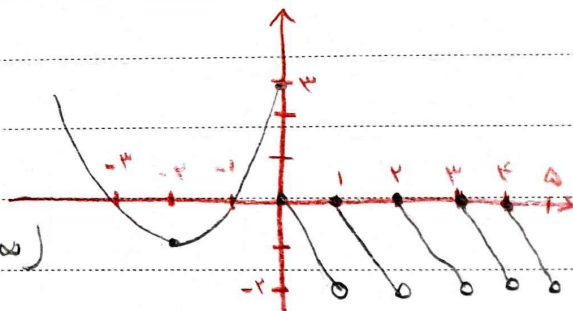
$$x^2 + 4x + 3 \rightarrow \frac{-b}{2a} = \frac{-4}{2} = -2$$

(v)

$$[2x] - 2x \xrightarrow{(0,1)} -2x$$

$$[2x] - 2x \xrightarrow{[1,2)} 2 - 2x \Rightarrow R_f = [-1, +\infty)$$

$$[2x] - 2x \xrightarrow{[2,3)} 4 - 2x$$



$$2x + 3 \geq 0 \Rightarrow 2x \geq -3 \Rightarrow x \geq \frac{-3}{2} \Rightarrow b = \frac{-3}{2}$$

(9)

$$\hookrightarrow (-\infty, \infty) \quad a = a+1 - \sqrt{\cdot} \Rightarrow a = a+1 \Rightarrow a = 1 \Rightarrow ab = 1 \times \frac{-3}{2} = -\frac{3}{2}$$

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

$$\sqrt{(\sqrt{1+x})^2 + (\sqrt{1-x})^2} + x \sqrt{1-x} \Rightarrow \sqrt{(\sqrt{1+x} + \sqrt{1-x})^2}$$

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

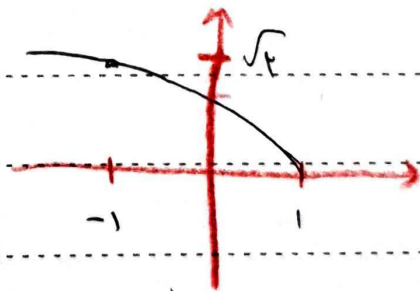
$$\frac{f(x)}{x} + \frac{g(x)}{x} = \sqrt{1+x} + \sqrt{1-x} \Rightarrow \frac{f(x)}{x} = \sqrt{1+x} + \sqrt{1-x} - \frac{g(x)}{x}$$

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

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

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

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



$$R = [0, \sqrt{x}]$$

Bon