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$f(x) = \sqrt{1-x^2} \Rightarrow 1-x^2 \geq 0 \Rightarrow -1 \leq x \leq 1 \Rightarrow$

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البرهان

(1, 5)

$f(-1) = \sqrt{1-(-1)^2} = \sqrt{0} = 0 \quad g(-1) = 1, g(0) = f, g(1) = 2$

$f(0) = 1 \quad f(1) = 0$

$x = -1 \rightarrow 2y - 2f \rightarrow 2 - f(0) = 2$

$x = 1 \rightarrow 2(2) - 2(0) = 4$

$x = 0 \rightarrow 2$

$\Rightarrow R_f : [2, 4]$

$f(x) = 2x - 1 \Rightarrow D_f = [2, +\infty) \Rightarrow f(2) = 3 \rightarrow R_f = [3, +\infty)$

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

$R_{f \circ g} = (-\infty, 2] \cup [3, +\infty)$

(2)

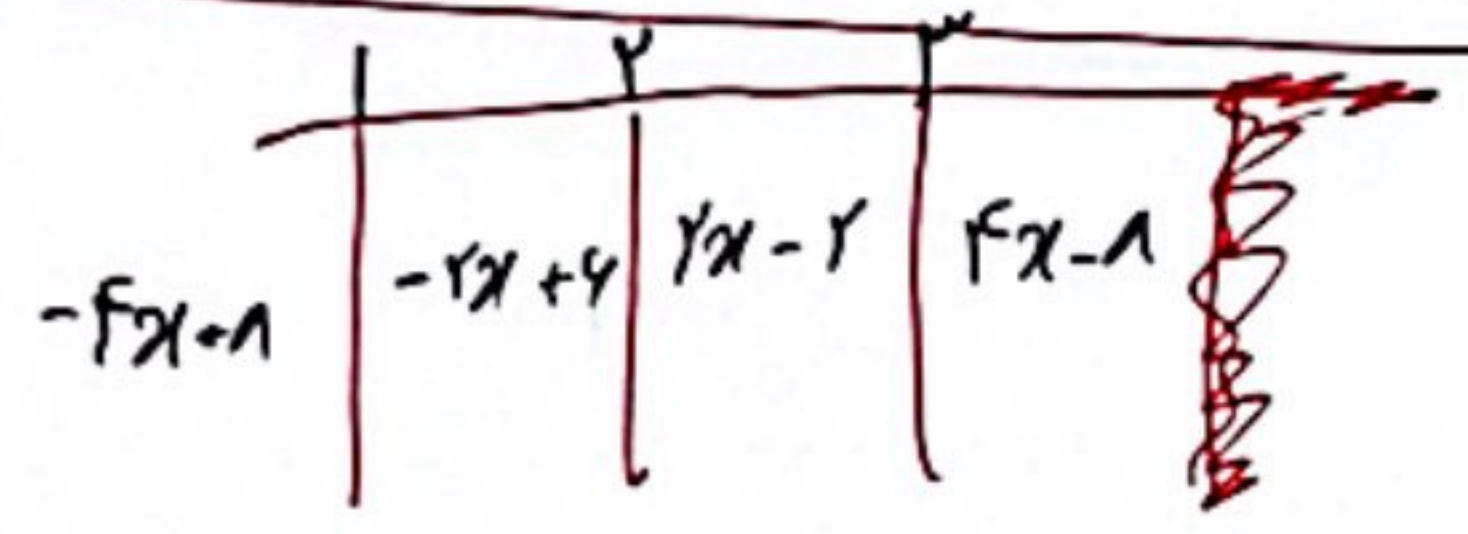
$y = -\frac{x^2}{y} + x + 2 \Rightarrow -\frac{x^2}{y} + x + 2 > \frac{y}{y} \Rightarrow -\frac{x^2}{y} + x + \frac{2}{y} > 0 \Rightarrow x^2 - 2x - 2 < 0$

$\frac{-1 \pm \sqrt{1+8}}{2}$

(2)

$\sqrt{b-a} \Rightarrow \sqrt{2-(-1)} = \sqrt{3}$

$a = -1, b = 2 \Rightarrow (-1, 2)$



$x = 2 \rightarrow 4$

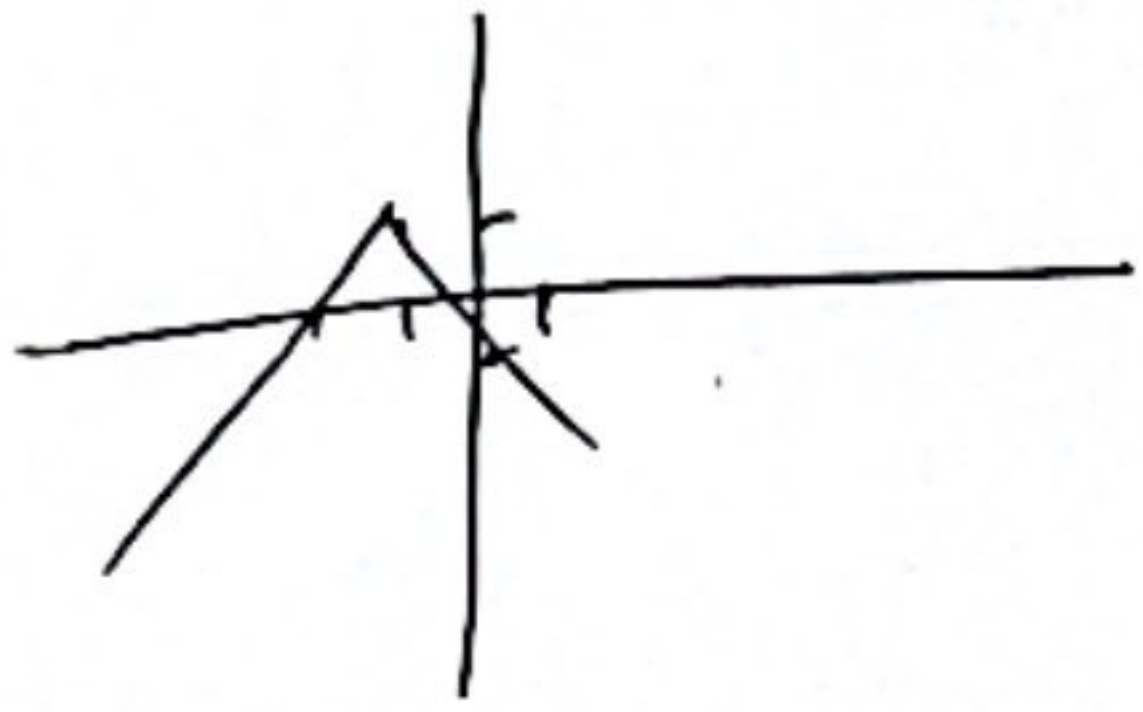
$x = 2 \rightarrow 2$

$x = 1 \rightarrow 2$

دایره محاطه در دایره

(2)

$\frac{-1}{x+2} \mid \frac{0}{-2x-2} \mid \frac{0}{-x-2}$



$R_f = (-\infty, 1]$

(2)

$y = \frac{x^2 + ax + m}{x+1} \quad R = \mathbb{R}$

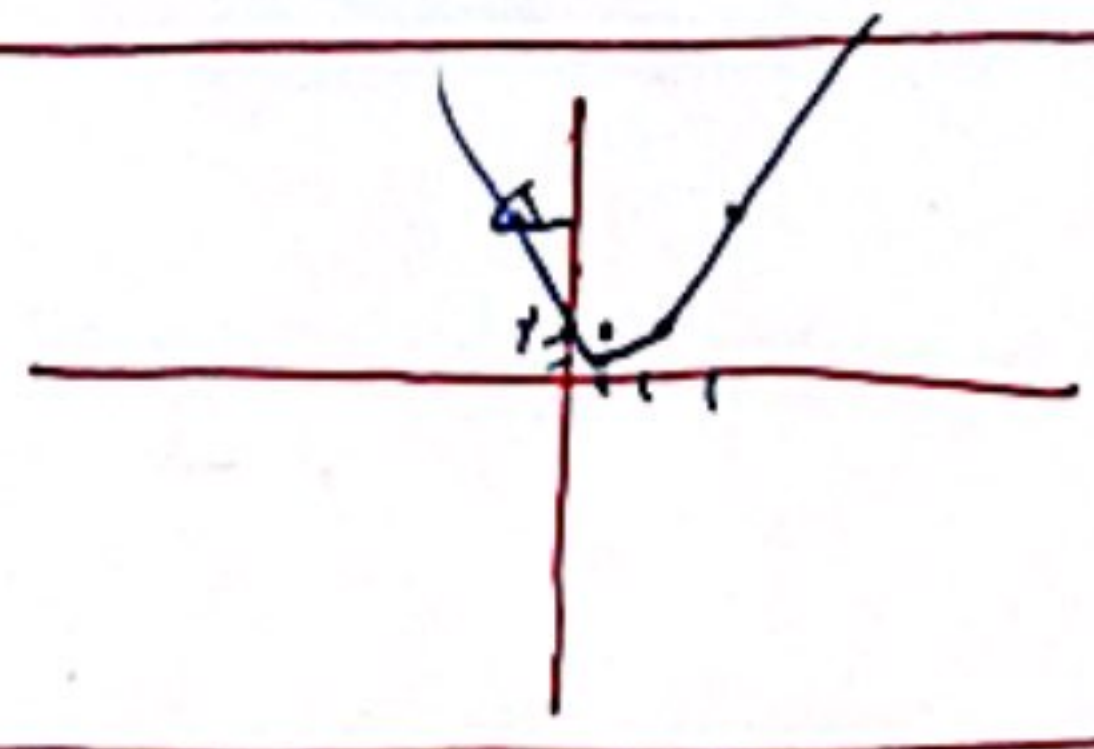
$y(x+1) = x^2 + ax + m \Rightarrow x^2 + (a-y)x + (x-y) = 0$

(2)

$(a-y)^2 - 4(x-y) = y^2 + 2a-4y-fm+fy-y^2-4y+2a-2x \Rightarrow 2y(2a-fm) + f = 2y-1+2ym \Rightarrow$

$14m-4f \leq 0 \Rightarrow m \leq \frac{f}{4} \Rightarrow m < f \rightarrow [2, 2] \rightarrow 2$

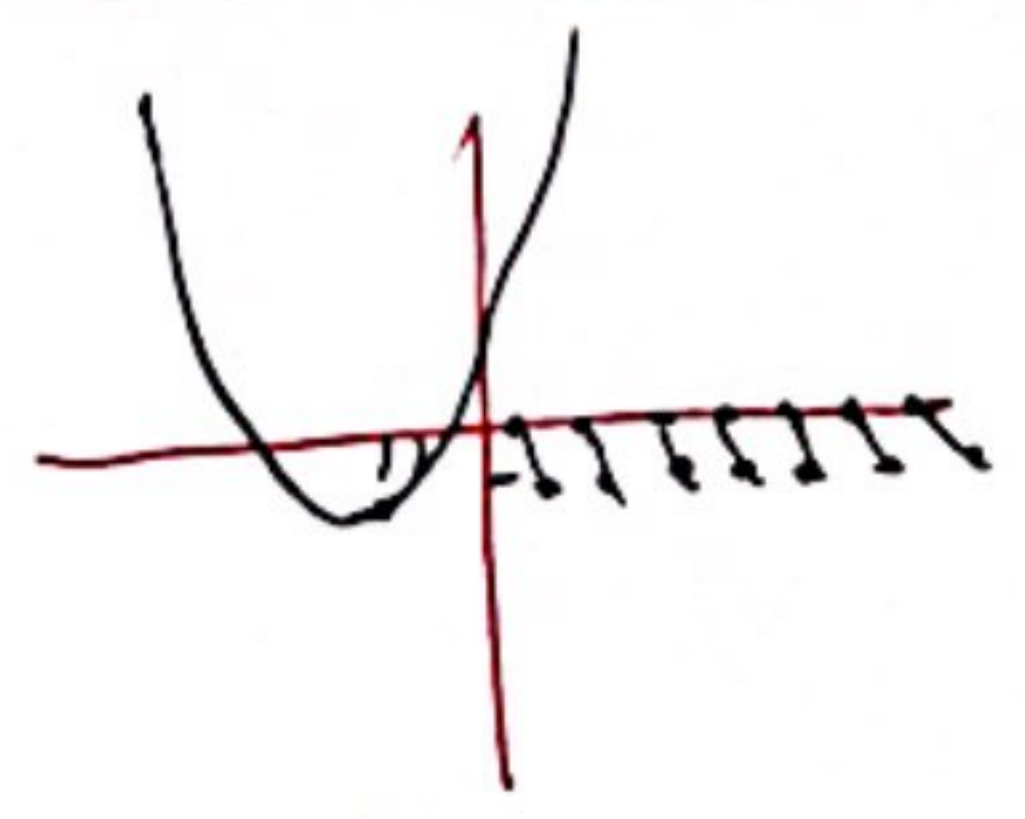
$f(x) = \begin{cases} x+2 & x \geq 2 \\ x^2-2x+2 & 0 \leq x < 2 \\ |x|+2 & x < 0 \end{cases}$



$R_f = [2, +\infty)$

(2)

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



$R_f = [1, +\infty)$

(2)

$$y = a+1 - \sqrt{2x+3}$$

$$D_f = [b, +\infty) \quad R_f = (-\infty, a]$$

$$2x+3 \geq 0 \rightarrow x \geq -\frac{3}{2} \rightarrow \underline{b = -\frac{3}{2}} \quad x = -\frac{3}{2} \Rightarrow y = a+1-0 = a+1$$

$$2x - \frac{3}{2} = \textcircled{-6} \quad \checkmark$$

$$\checkmark \quad \begin{matrix} \delta = a+1 \\ \mu \end{matrix}$$

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پاسیانه...

اسکال

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