

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

$$f(x) = \sqrt{1-x^2} \quad \text{است. از دامنه} \quad -1 \leq x \leq 1$$

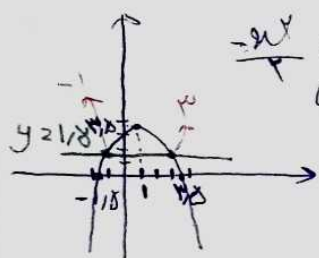
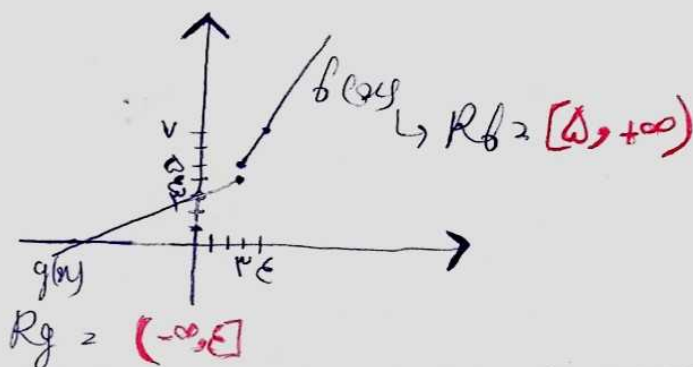
$$\hookrightarrow D_f = [-1, 1]$$

$$2g - 3f \begin{cases} x=1 \rightarrow 4-0=4 \\ x=0 \rightarrow 0-0=0 \\ x=-1 \rightarrow 0-0=0 \end{cases} \quad \text{II}$$

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

$$g(x) = \frac{1}{2}x+3 \rightarrow D_g = (-\infty, 3]$$

$$R_f \cup R_g \hookrightarrow \mathbb{R} - (4, 5)$$



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

$$\hookrightarrow 1 - \varepsilon < \frac{-x^2}{3} + 3x + 3 < 1 + \varepsilon$$

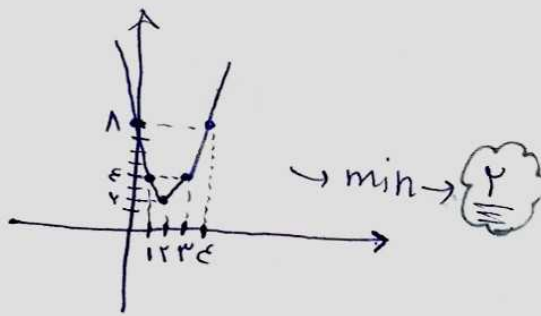
$$3 - (1) > \varepsilon \rightarrow \sqrt{\varepsilon} = 2$$

$$\frac{(-1 \pm 3)}{2} = 1 \text{ or } -1$$

$$\hookrightarrow \frac{-x^2}{3} + 3x + 3 \geq 4 \quad \frac{-x^2}{3} + 3x + 3 \leq 0 \quad -x^2 + 2x + 3 \geq 0$$

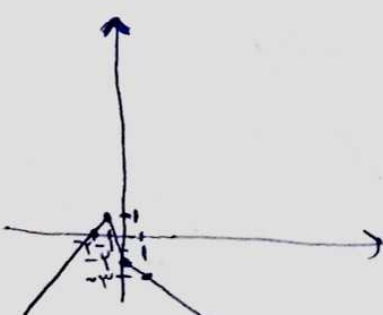
$$\min y = |x-1| + |2x-3| + |x-4|$$

1	2	3
$1 - \varepsilon x$		$x - 1$
	$3 - x$	$x - 1 + 2x - 4$
$\sum 2x + 5$		$3x - 2$



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

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



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

$\epsilon \in \mathbb{R}, m \in \mathbb{R}$

$y^2 - 4y + 18 - \epsilon m < 0 \iff y^2 - 4y + 18 > \epsilon m$

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$R_f = \mathbb{R}$

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$m \geq \epsilon$

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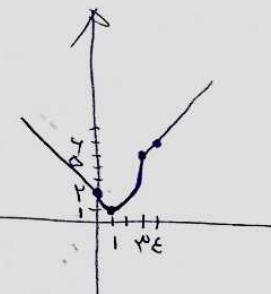
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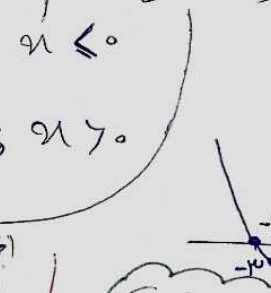
$f(x) = \begin{cases} x^2 + 1 & ; x \leq 0 \\ x^2 - 2x + 1 & ; 0 < x < 1 \\ |x| & ; x \geq 1 \end{cases}$



$R_f = [1, \infty)$

y

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



$R_f = [1, \infty)$

λ

$y \geq a + 1 - \sqrt{x^2 + 1}$

$D_f = [b, \infty)$

$R_f = (-\infty, \infty)$

$a + 1 \geq \delta$

$a \geq \epsilon$

$a \geq \epsilon$

$a \geq \epsilon$

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

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$D_f = D_g \implies y = \frac{f(x)}{4} - \frac{g(x)}{4}$

$a + b \rightarrow \sqrt{x^2 + 1}$

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$a + b \rightarrow \sqrt{x^2 + 1}$

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