

18, 50

آرودش یاری یازدهم هفته آلفین شهابه

$$f(x) = \{(-1, 0), (0, 1), (2, \sqrt{3}), (1, 0)\} \quad g(x) = \{(-1, 1), (0, 4), (2, 0), (1, 2)\}$$

$$rg \circ f = \{(-1, 2), (0, 4), (1, 4)\} \quad 2 + 0 + 4 = 11$$

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

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

$$R_f \cup R_g = [3, +\infty) \cup (-\infty, 4] = \mathbb{R} - (4, 3)$$

$$y = -\frac{x^2}{2} + x + 3 \Rightarrow -\frac{x^2}{2} + x + 3 > \frac{3}{2} \Rightarrow -x^2 + 2x + 6 > 3 \Rightarrow -x^2 + 2x + 3 > 0$$

$$\Rightarrow -1 < x < 3$$

x	-1	3
	-	+

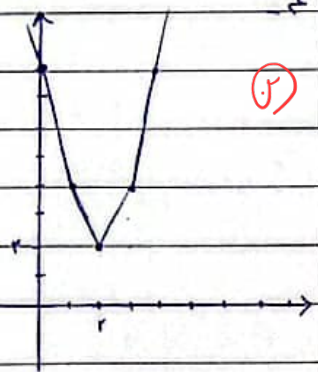
 $(a, b) \rightarrow (-1, 3) \quad a = -1 \quad b = 3$

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

$$y = |x-1| + |x-3| + |x-5|$$

0	1	3	5	6
1	ε	2	ε	1

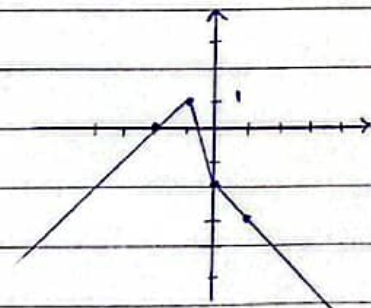
کمترین مقدار $\rightarrow n=2$



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

-2	-1	0	1
0	1	-2	-3

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



s.a.m

$$y = \frac{x^r + \omega x + m}{x+1} \rightarrow y(x+1) = x^r + \omega x + m \rightarrow x^r + x(\omega - y) + (m - y) = 0$$

1, 70

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} \quad \Delta \geq 0 \rightarrow (\omega - y)^2 - 4(1)(m - y) \geq 0 \rightarrow \omega^2 - 1 - y + y^2 - 4m + 4y \geq 0$$

$$\rightarrow y^2 - 4y + \omega^2 - 4m \geq 0 \rightarrow (y^2 - 4y + 4) + (\omega^2 - 4m - 4) \geq 0 \rightarrow (y - 2)^2 + (\omega^2 - 4m - 4) \geq 0$$

$$\Rightarrow \omega^2 - 4m \geq 0 \rightarrow \omega^2 \geq 4m \rightarrow m \leq \frac{\omega^2}{4} \rightarrow 1, 2, 3, 4$$

$m = 1 \rightarrow \frac{x + \omega x + 1}{x+1} = x + 1, \frac{x + 1}{x+1}$

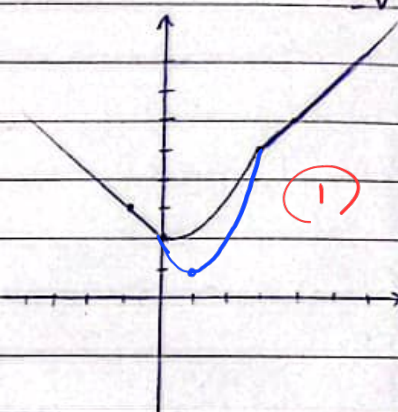
مربعات IR نهشود

میانهای مخرجی کوچکتر مساوی ۴
میانهای ۴ عدد طبیعی

$$f(x) = \begin{cases} x+r & x \geq r \\ x^r - rx + r & 0 \leq x < r \\ |x| + r & x < 0 \end{cases} \rightarrow \begin{matrix} |^r & |^t \\ \omega & |^t \\ |^0 & |^r \\ |^0 & |^{-1} \end{matrix}$$

$\Rightarrow R_f = [r, +\infty) \cup (-1, +\infty)$

min



$$f(x) = \begin{cases} x^r + \varepsilon x + r & x \leq 0 \\ [rx] - rx & x > 0 \end{cases} \rightarrow \begin{cases} x_{\min} = -\frac{b}{2a} = -\frac{\varepsilon}{r} = -r \\ y_{\min} = -1 \end{cases} \rightarrow R_1 = [-1, +\infty)$$

$-1 < [x] - x \leq 0 \rightarrow R_2 = (-1, 0)$

5

$$R_1 \cup R_2 = [-1, +\infty)$$

میانهای مخرجی

$$rx + r \geq 0 \rightarrow x \geq -\frac{r}{r} \rightarrow D = [-\frac{r}{r}, +\infty) \rightarrow b = -\frac{r}{r}$$

5

$$y_{\max} = a + 1 \rightarrow R = (-\infty, a+1] = (-\infty, \omega] \rightarrow a+1 = \omega \rightarrow a = \varepsilon \quad ab = (-\frac{r}{r})(\varepsilon) = -\varepsilon$$

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

$$y = \frac{f}{r} - \frac{1}{r}((r\sqrt{r+r\sqrt{1-x^r}}) - f) = \frac{f}{r} - \sqrt{r+r\sqrt{1-x^r}} + \frac{f}{r} \rightarrow y = \frac{f}{r} - \sqrt{r+r\sqrt{1-x^r}}$$

5

$$y = \sqrt{x+1} + r\sqrt{1-x} - \sqrt{r+r\sqrt{1-x^r}} = \sqrt{x+1} + r\sqrt{1-x} - \sqrt{r\sqrt{1+\sqrt{1-x^r}}} \quad D = [-1, 1]$$

$$\rightarrow x = -1 \rightarrow y = 0 \quad x = 1 \rightarrow y = \sqrt{r} \rightarrow R = [0, \sqrt{r}]$$

s.a.m