

$$\frac{F(2) - F(1)}{2} = \frac{1 - \frac{a}{2} - (1 - a)}{2} = \frac{\frac{2-a}{2} - (\frac{2-a}{2})}{\frac{2}{1}} = \frac{\frac{2-a-2+a}{2}}{\frac{2}{1}} = \frac{0}{2} = 0$$

مشتق (آفتاب‌نظر) = $-\left(\frac{-a}{2r}\right) = \frac{a}{2r} \rightarrow \frac{a}{r} = \frac{a}{2r} \rightarrow r = \pm \sqrt{2}$

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$y = 2ax^2 - 2x + 11a$ $y = x \rightarrow$ نقطه x نامعلوم
 $x = 2ax^2 - 2x + 11a$ $\frac{y}{x} = 1$

$a = \frac{1}{2} \rightarrow ax = \frac{1}{2}$
 $-4 + 2 \cdot \frac{1}{2} \cdot 2 = 0$
 $ax = 9$

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حسب $\rightarrow 2ax - 2 = 1 \rightarrow 2ax = 3 \rightarrow x = \frac{3}{2a}$

جابجایی $\rightarrow \frac{3}{2a} = 2a\left(\frac{9}{4a^2}\right) - 2\left(\frac{3}{2a}\right) + 11a \Rightarrow \frac{3}{2a} = \frac{9}{2a} - \frac{12}{2a} + 11a$
 $-\frac{9}{2a} + 12 + 22a = \frac{-2 + 11a}{a} = \frac{3}{2a}$

$y = x^2 - 12x + 2 \xrightarrow{\text{مشتق}} 2x - 12 = 0 \rightarrow x = \pm 6$

جدول تغییرات

	$-\infty$	-6	6	$+\infty$
F'	+	0	-	+
F		↗	↘	↗
		Max	Min	

$x = -6 \rightarrow y = +14$
 $x = 6 \rightarrow y = -12$
 جواب

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$F'(-2) = 0 \rightarrow 12 - 2a = 0 \rightarrow a = 6$

$F'(0) = 0 \rightarrow -2b = 0 \rightarrow b = 0$

$F(x) = 2x^2 + 6ax - 2b$

$F(x) = 2x^2 + 6ax - 2b$

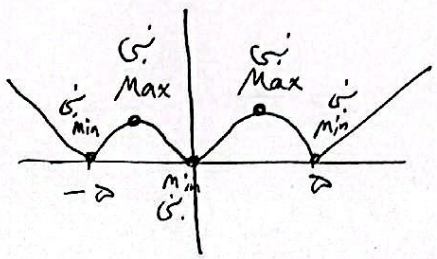
	$-\infty$	-2	0	$+\infty$
F'	+	0	-	+
F		↗	↘	↗
		Max	Min	

Max $\left| \begin{matrix} -2 \\ 0 \end{matrix} \right.$
 Min $\left| \begin{matrix} 0 \\ -2 \end{matrix} \right.$

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$ab = \sqrt{(-2-0)^2 + (0-(-2))^2} = \sqrt{2} = 2\sqrt{2}$

$F(x) = x^2 - a|x| = |x| \cdot (|x| - a)$ $0 \leq x < a$
 $\pm a \leq x < \infty$



$x \rightarrow +\infty \xrightarrow{F(x)} +\infty$
 $x \rightarrow -\infty \xrightarrow{F(x)} +\infty$

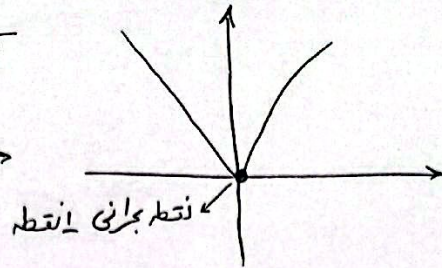
$\frac{n}{m} = \frac{r}{r}$

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$$F(x) = \frac{x(|x| + 2)}{x^2 + 5}$$

کل تابع در دو مطلق
در 0: 0

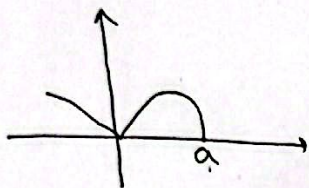
شکل \rightarrow



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$$F(x) = -\left(x - \frac{a}{2}\right)^{\frac{2}{3}} (x - a) \rightarrow x_m = \frac{\frac{2}{3}a + 0}{\frac{2}{3} + 1} = \frac{2}{5}a$$

$$y_m = F\left(\frac{2a}{5}\right) = \left(\frac{2a}{5}\right)^{\frac{2}{3}} \cdot \left|\frac{2a}{5} - a\right| \stackrel{=}{=} \frac{2}{5} \cdot \frac{2}{5} \rightarrow a = \frac{2}{5}$$



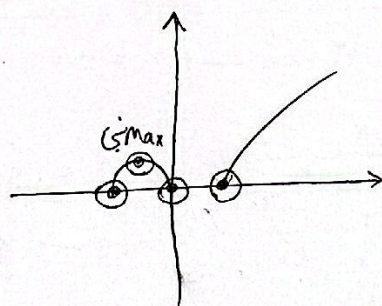
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$$f(x) = \sqrt{x|x| - x} \rightarrow \sqrt{x(|x| - 1)}$$

$$D_f = [-1, 0] \cup [1, +\infty)$$

0, ±1 : ریشه ها

$$x \rightarrow +\infty \rightarrow \frac{1}{x} \rightarrow +\infty$$



$$M = 1 \text{ (بسیار Max)}$$

$$m = 0 \text{ (بسیار کم Min)}$$

$$\frac{f_{+0}}{f_{-0}} = 1$$

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$$(1, +\infty) \rightarrow 1 - m \leq 1 \rightarrow m \geq 0 \quad *$$

$$(1, +\infty) \rightarrow f' \leq 0 \rightarrow ad - bc \leq 0 \rightarrow m^2 - m - 2 \leq 0 \rightarrow -1 \leq m \leq 2 \quad **$$

$$\frac{-1 \pm 2}{1 + 1 - 1} = 1$$

$$* \cap ** \rightarrow 0 \leq m < 2 \rightarrow m \geq 0, 1$$

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ریشه ها = 0 ریشه صورت

انفعال ساده \rightarrow بجانب نام $= 1$ ریشه خارج

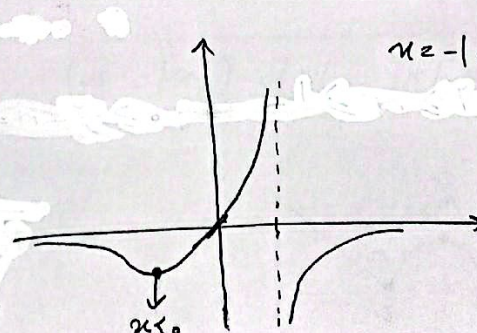
(0, L)

$$x \rightarrow \pm\infty \rightarrow \begin{cases} +\infty \rightarrow 0^- \\ -\infty \rightarrow 0^- \end{cases}$$

$$\frac{x}{1+x^2} \rightarrow \frac{(1)(1+x^2) - (x^2)(1)}{(1+x^2)^2} = \frac{1-x^2}{(1+x^2)^2}$$

$$x \neq \pm 1$$

$$x = -1$$



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