

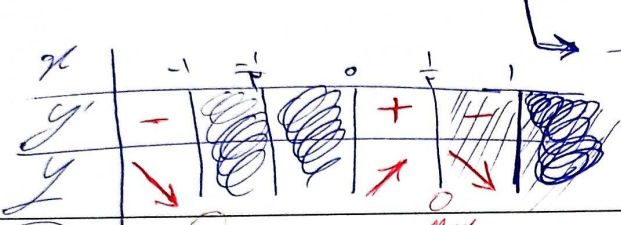
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$f(x) = \begin{cases} \sqrt{x-x^2} & x \geq 0 \\ \sqrt{x+x^2} & x < 0 \end{cases}$

$x \geq 0 \rightarrow \frac{1-2x}{2\sqrt{x-x^2}} = 0 \rightarrow x = \frac{1}{2}$

$x < 0 \rightarrow \frac{1+x}{2\sqrt{x+x^2}} = 0 \rightarrow x = -\frac{1}{2}$

$x=0 \rightarrow D_f = \dots$



$m=1$
 $n=0$

Min

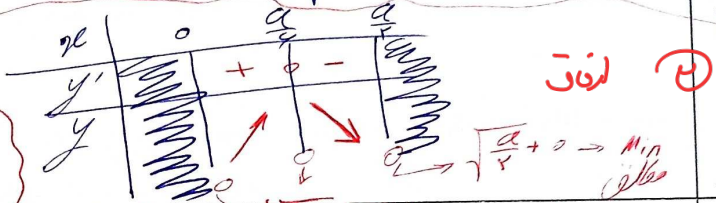
$k_2 \leftarrow \{-1, 0, \frac{1}{2}, 1\}$

$D_f = [0, +\infty) \cap (-\infty, \frac{a}{r}]$

$f'(x) = \frac{1}{2\sqrt{x}} + \frac{-r}{x\sqrt{a-rx}} = 0 \rightarrow \frac{1}{2\sqrt{x}} = \frac{1}{a-rx}$

$a-rx = 2\sqrt{x} \rightarrow x = \frac{a}{r}$

$\sqrt{\frac{a}{r}} \times (\sqrt{\frac{a}{r}} + \sqrt{\frac{ra}{r}}) = \sqrt{12}$



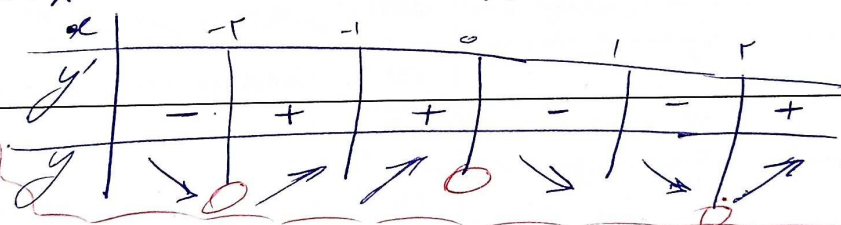
Max

$\sqrt{\frac{ar}{12}} + \sqrt{\frac{ar}{12}} = \sqrt{12} \rightarrow \frac{a}{\sqrt{12}} + \frac{a}{\sqrt{12}} = \sqrt{12} \rightarrow a + 2a = 12 \rightarrow a = 4$

$x^2 - 5x = 0 \rightarrow x = \pm 5$

$f'(x) = \frac{(5x^2 - 9x)(x^2 - 1) - (2x)(x^2 - 5x^2)}{(x^2 - 1)^2}$

$f'(x) = 0 \rightarrow x = \pm 1$
 $x = 0$



$x=0 \rightarrow 0 = a(0) + b(0) + c(0) + d \rightarrow d = 0$

$x=1 \rightarrow 1 = a + b + c \rightarrow -r = -2a - 2b$

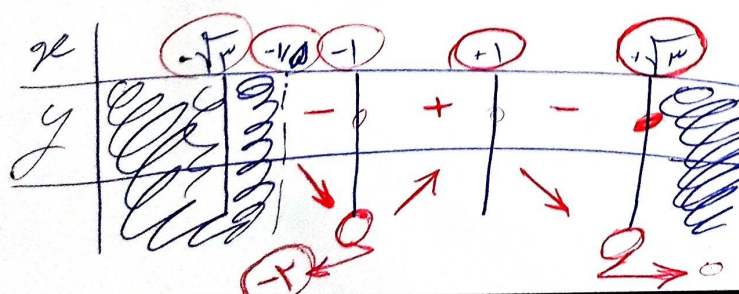
$f'(x) = 3ax^2 + 2bx + c \rightarrow 3a(0) + 2b(0) + c = 0 \rightarrow c = 0$
 $3a + 2b + 0 = 0 \rightarrow b = -\frac{3a}{2}$

$0 = 2b + 3a$
 $-r = a \rightarrow b = 3$

$ab = 9$

$3-x^2 = 0 \rightarrow x = \pm\sqrt{3}$

$f(x) = 3x - x^3 \rightarrow f'(x) = 3 - 3x^2 \rightarrow x = \pm 1$



لیفتشید و به نظر شما
کجای کار را در حل سوالات
قدر مطلق اشتباهی
شواهدش می‌کنم یا اینج
سوالات قدر مطلق را

Min مطلق

درست پاسخ دادید!
من بدتون می‌آید! سوالاتی که مطلق هم منسوبه که راه حل رو ببینید

$$1 = 1 + 3a + b \rightarrow 3a + b = 0 \rightarrow \frac{-3}{1} + b = 0 \rightarrow b = \frac{3}{1}$$

$$f'(x) = -3x^r + 4ax \rightarrow -3 - 4a = 0 \rightarrow a = \frac{-1}{4}$$

$$\frac{b}{a} = \frac{\frac{3}{1}}{\frac{-1}{4}} = -12$$

Ⓟ

$$A \left| \begin{array}{c} \frac{-(a-1)}{a+1} \\ a \\ \frac{a}{a+1} \end{array} \right.$$

$$f'(x) = 3x + 1 \rightarrow \frac{-3(a-1)}{a+1} + 1 = 0 \rightarrow a+1 = 3a-3$$

$$\rightarrow 2a = 4 \rightarrow a = 2$$

$$g(x) = \frac{3x+3}{4x+1} = 0 \rightarrow x = \frac{-3}{4}$$

Ⓟ

$$f_x\left(\frac{-1}{4}\right)^r + a\left(\frac{-1}{4}\right)^r + 1 = 0 \rightarrow 1 - \frac{a}{4} + 1 = 0 \rightarrow a = 8$$

Ⓟ

$$f'(x) = \frac{3x^r(x^{r-1}) - 3x^r(x^r)}{(x^r-1)^r} = 0$$

$$\begin{cases} \rightarrow x = 1 \star \\ \rightarrow x = 0 \\ \rightarrow x = \frac{1}{3} \end{cases}$$

| | | | | |
|------|--------------|--------------|---------------|--------------|
| x | 0 | 1 | $\frac{1}{3}$ | 1 |
| y' | + | - | - | + |
| y | Ⓟ | Ⓟ | Ⓟ | Ⓟ |

~~Ⓟ~~ $\left(\frac{1}{3}, \frac{1}{3}\right)$ → ~~Ⓟ~~ $\left(\frac{1}{3}, \frac{1}{3}\right)$ → ~~Ⓟ~~ $\left(\frac{1}{3}, \frac{1}{3}\right)$

$$f'(x) = \frac{3x^r(x^r-3) - 3x(x^r-3)}{(x^r-3)^r} = 0$$

$$\begin{cases} \rightarrow x = \pm\sqrt{3} \star \\ \rightarrow x = 0 \end{cases}$$

Ⓟ

صحنه A معین افقی $y=3$ و معین قائم $y=-\frac{1}{x}$ است و معین قائم $y=1$ می باشد

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$$4\left(-\frac{1}{x}\right)^2 + a\left(-\frac{1}{x}\right) + 1 = 0 \rightarrow \frac{1}{x}a = 2 \rightarrow a = 2$$

$$\lim_{x \rightarrow \infty} \frac{bx^2 + 1}{cx^2 + ax + 1} = \frac{b}{c} = 3 \rightarrow b = 12$$

$$\left. \begin{array}{l} a = 2 \\ b = 12 \end{array} \right\} \frac{b}{a} = 6$$

$$f'(x) = \frac{2x^3(x^2 - 3) - 2x(x^2 - 3)}{(x^2 - 3)^2} = \frac{2x[(2x^2 - 4x^2) - (x^2 - 3)]}{(x^2 - 3)^2}$$

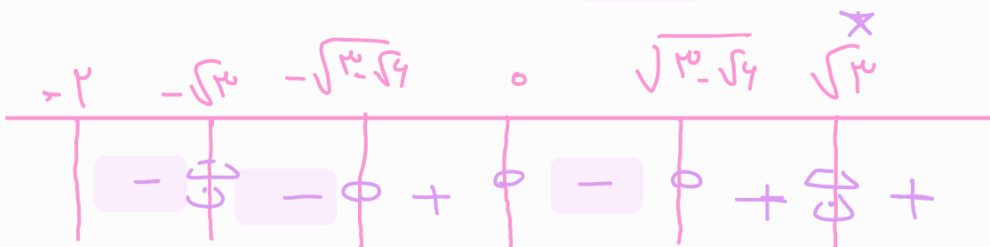
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$$2x^3 - 4x^2 + 4x = 0 \rightarrow 2x(x^2 - 2x + 2) = 0 \rightarrow x = 0$$

$$\hookrightarrow x^2 = t$$

$$t^2 - 4t + 2 = 0 \rightarrow t = \frac{4 \pm \sqrt{16 - 8}}{2} \rightarrow x = \pm \sqrt{2 \pm \sqrt{2}}$$

$$-2 < x < 2$$



در بازه $(\sqrt{2}, 2)$ الیاً نزولی است!

$$x(1-|x|) \geq 0 \rightarrow \text{D}f = (-\infty, -1] \cup [0, 1]$$

$$f'(x) = \frac{1-2|x|}{2\sqrt{x(1-|x|)}} \rightarrow |x| = \frac{1}{2} \rightarrow x = \frac{1}{2} \quad (x = -\frac{1}{2} \text{ در دامنه نیست})$$

| | | |
|------|---------------|---|
| x | $\frac{1}{2}$ | |
| y' | + | - |
| y | ↑ | ↓ |

\downarrow
max

$n=0$
 $m=1$

$$m+n+k = k+1 = 5$$

نقاط 0, ±1, و $\frac{1}{2}$ بهتری $k=4$

$$f(x) = \pm \frac{x^2(x^2-2)}{x^2-1} \rightarrow f'(x) = \pm \frac{(4x^3-2)(x^2-1) - (x^4-2x^2)2x}{(x^2-1)^2} = 0$$

$$\pm(2x^4 - 4x^3 + 2x) = 0 \rightarrow x=0$$

$$\rightarrow x^4 - 2x^2 + 1 = 0 \quad (x \text{ ریشه ندارد})$$

تعداد 2, 2 - ریشه‌های دایره‌معلق و تعدادی صفر ریشه‌های مستقیم است پس 3 نقطه‌ای بهتری دارد!