

$f(1) = 1 - a \rightarrow m = \frac{1 - \frac{a}{r} - 1 + a}{r - 1} = \frac{\frac{ra}{r} - 1 + a}{r - 1} = \frac{a}{r}$

$f(r) = 1 - \frac{a}{r}$

$f'(x) = \frac{+a}{x^2} \rightarrow \frac{a}{x^2} = \frac{a}{r}$ $x \in \left(\sqrt{r}, -\sqrt{r} \right)$ $\therefore \frac{a}{r} = \frac{\sqrt{r}}{r}$

این سری -1

$rax - \delta = 1 \rightarrow fax = \gamma \quad ax = \frac{r}{r}$ $rax^2 - \delta x + 11a = x$

$rax^2 - \gamma x + 11a = 0 \quad rx - \gamma x + 11a = 0 \rightarrow 11a = rx \quad x = 9a$

$9ax^2 = \frac{r}{r} \quad a^2 = \frac{1}{r} \quad a \in \left(\frac{1}{r}, -\frac{1}{r} \right)$ $a = -\frac{1}{r}$

$y = x^2 - 12x + 2 \rightarrow y' = 2x^2 - 12$ $2x^2 - 12 = 0 \quad 2x^2 = 12 \quad x \in \left(-\sqrt{6}, \sqrt{6} \right)$

	-2	2	
y'	+	-	+
	↗	↘	↗

$\min = (2, -14)$ $\therefore \frac{14}{2} = -14$

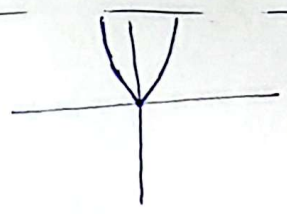
$y = x^2 + ax^2 - rbx - f \rightarrow y' = 2x^2 + 2ax - rb$

$-rb = 0 \rightarrow b = 0 \quad 12 - fa = 0 \rightarrow a = 2 \Rightarrow y = x^2 + 2x^2 - f$

$\sqrt{(-2)^2 + (-f)^2} = \sqrt{4 + f^2} = 2\sqrt{5}$

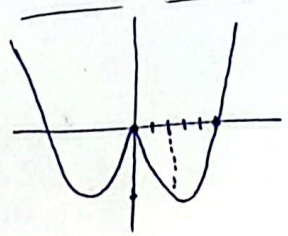
$y = x(|x| + r)$

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

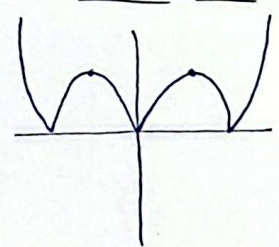


یک نقطه بحرانی

$x^2 - \delta|x|$



$|x^2 - \delta|x|$



$m = 2$
 $n = 2$

$\frac{n}{m} = \frac{2}{2}$

$$y' = \frac{m(x-1+m) - mx - r}{(x-1+m)^2} = \frac{mx - m + m^2 - mx - r}{(x-1+m)^2} = \frac{m^2 - m - r}{(x-1+m)^2}$$

$$m^2 - m - r = (m-r)(m+1) \quad \text{I)} \quad \begin{array}{c} -1 \quad r \\ + \quad r \quad - \quad r \quad + \end{array} \quad \text{عبارت } (+)$$

$$1 - m \leq 1 \rightarrow m \geq 0 \quad \text{II)}$$

$$\text{I)} \cap \text{II)} = \text{[0, 1]} \quad m = 0, 1$$

$$y = \frac{x}{1-x|x|} \rightarrow Dy = R - \{1\}$$

$$\frac{x}{1+x^2} \quad | \quad \frac{x}{1-x^2}$$

نقطه‌های بحرانی دارد

$$\frac{4x^2 - 2x^2}{(1+x^2)^2} \quad | \quad \frac{1-x^2 + 2x^2}{(1-x^2)^2}$$

$$\frac{1-x^2}{(1+x^2)^2} \quad | \quad \frac{x^2+1}{(1-x^2)^2}$$

$$\Downarrow \quad \begin{array}{l} 100\text{E} \\ \swarrow \text{بحرانی} \\ -1 \checkmark \end{array}$$

$$\Downarrow \quad \begin{array}{l} 100\text{E} \\ \swarrow \text{بحرانی} \\ -100\text{E} \end{array}$$