

افشاد متوسط = $\frac{f(x) - f(1)}{x - 1} = \frac{a}{x}$

افشاد لحظاتی = $\frac{a}{x^2}$

$\Rightarrow \frac{a}{x} = \frac{a}{x^2} \Rightarrow n = \sqrt{x}$ ⚠️ در بازه نیست $-\sqrt{x}$!

① $y' = 1 \Rightarrow \tan x - a = 1 \Rightarrow x = \frac{\pi}{2a}$

② $y = n \Rightarrow \tan x - a = n \Rightarrow \tan\left(\frac{\pi}{2a}\right) - \frac{\pi}{2a} + na = 0$

③ $\left(\frac{\pi}{2a}\right) - \frac{\pi}{2a} + na = 0 \rightarrow \frac{\pi}{2a} - \frac{\pi}{2a} + na = 0 \rightarrow \frac{9 + \pi a^2}{2a} = 0 \Rightarrow a^2 = \frac{9}{\pi^2}$
 $a^2 = \frac{9}{\pi^2} \rightarrow a^2 = \frac{1}{4} \rightarrow a = \pm \frac{1}{2}$ (۱, ۶)!
 a فرکانس $\frac{1}{T}$ به بزرگی و جهت بستگی دارد

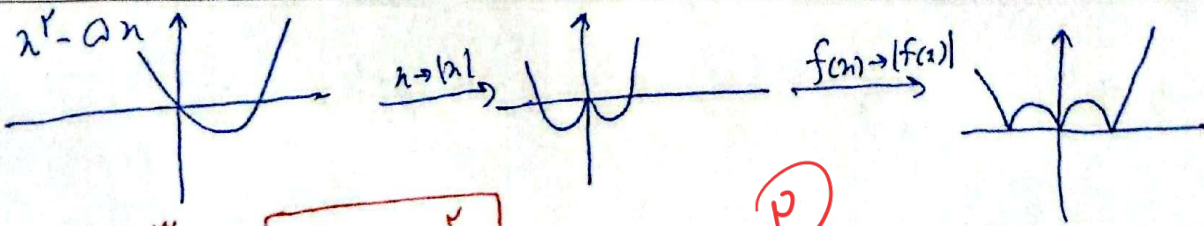
$y' = 3x^2 - 12 = 3(x^2 - 4)$ ایجاد کند درگیری مثبت در بازه $x > 2$ و $x < -2$

x	-2	+	2
y'	+	-	+
y	↗	↘	↗

مقادیر ویژه $f(x) = -12$ Ⓜ

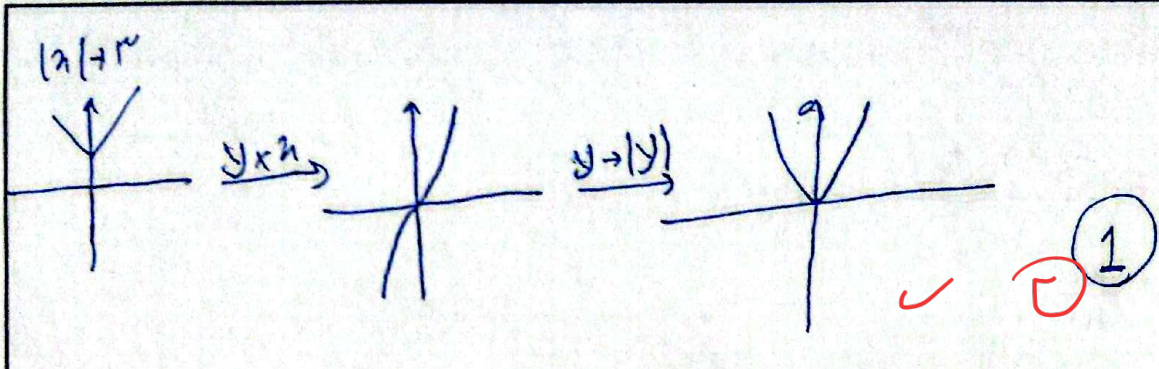
① $y' = 3x^2 + 2ax - 2b$ $\left. \begin{array}{l} f'(0) = 0 \Rightarrow -2b = 0 \Rightarrow b = 0 \\ f'(-1) = 0 \Rightarrow 3 - 2a = 0 \Rightarrow a = \frac{3}{2} \end{array} \right\} \Rightarrow \begin{cases} f(0) = -f \\ f(-1) = -1 + 12 - f = 0 \end{cases}$

فاصله دو نقطه = $\sqrt{(0 - (-1))^2 + (-f - 0)^2} = \sqrt{1 + f^2} = 2\sqrt{5}$ Ⓜ



$n = 3$
 $m = 2$

$\frac{m}{n} = \frac{2}{3}$ Ⓜ



① $f'(n) = \frac{r}{r\sqrt[n]{n}} (a-n) - \sqrt[n]{n^r} = \frac{ra - an}{r\sqrt[n]{n^r}} = 0 \Rightarrow n = \frac{r}{a} a$

② $f(\frac{ra}{a}) = 1/a \Rightarrow \sqrt[r]{\frac{ra^r}{a}} \times (\frac{ra}{a}) = \frac{r}{a} \Rightarrow \frac{ra^r}{a} \times \frac{a^r}{ra} = \frac{1}{a}$

③ $a^a = \frac{a^a}{1^a} \Rightarrow a \in \frac{a}{1}$

① $f'(n) \begin{cases} n > 0 \Rightarrow \frac{r(n-1)}{r\sqrt[n^2-1]} \\ n < 0 \Rightarrow \frac{-(n-1)}{r\sqrt{-n^2-1}} \end{cases}$

n	-1	-1/2	0	1/2	1
y'	+∞	+	-	-	+∞
y	↗	↗	↘	↘	↗

② $\Rightarrow \begin{cases} m=1 \\ n=0 \end{cases}$ ③ $\frac{km+n}{k-n} = 1$

تعریف نشده

$y' = \frac{m(n-1+m) - (mn+1)}{(n+m-1)^2} = \frac{m^2 - m - 1}{(n+m-1)^2} \Rightarrow -1 < m < 2$

$\rightarrow 1-m < 1 \Rightarrow m > 0$

①, ② $\Rightarrow m \in (0, 2)$

$\lambda \geq 0 \rightarrow f(\lambda) = \frac{\lambda}{1-\lambda^2} \Rightarrow f'(\lambda) = \frac{1-\lambda^2+2\lambda^2}{(1-\lambda^2)^2} \Rightarrow \lambda \neq \pm 1$

$\lambda < 0 \rightarrow f(\lambda) = \frac{\lambda}{1+\lambda^2} \Rightarrow f'(\lambda) = \frac{1+\lambda^2-2\lambda^2}{(1+\lambda^2)^2} = \frac{1-\lambda^2}{(1+\lambda^2)^2} \Rightarrow \lambda = -1$

نقطه بزرگی

قابودر $\lambda = 0$ مستوی پذیر است و مستوی برابر صفریت پس تنها نقطه بزرگی $\lambda = -1$ است!

نقطه بزرگی

$$f'(n) < 0 \rightarrow m^2 - n - 2 \leq 0 \rightarrow -1 \leq m \leq 2, m \neq 2 \rightarrow -1 \leq m < 2$$

$$g'(n) < 0 \rightarrow 1 - n \leq 1 \rightarrow n \geq 0$$

$$1, 2 \rightarrow m = 0 \leq 1$$