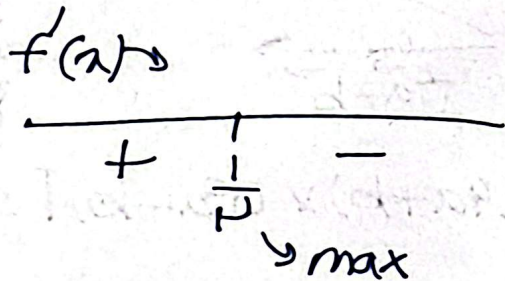


۱۱, ۱۷, ۱۸ از زیر

$$\sqrt{\lambda^2 + 1} \quad 0 \quad \sqrt{-\lambda^2 + 1}$$

$$Df = \begin{cases} 0 < \lambda < 1 \\ \lambda < -1 \end{cases}$$



min → زیاد  
 ۲ → ns ± 1, 0

$$f'(\lambda) \leq \frac{1}{\mu\sqrt{\lambda}} - \frac{1}{\sqrt{a-\mu\lambda}} \leq \frac{\sqrt{a-\mu\lambda} - \mu\sqrt{\lambda}}{\mu\sqrt{\lambda}\sqrt{a-\mu\lambda}}$$

$$f(\frac{a}{\mu}) \leq \sqrt{\frac{a}{\mu}} + 0 \leq \sqrt{\frac{a}{\mu}} \quad \text{min}$$

$$\mu\sqrt{\frac{a}{\mu}}\sqrt{\frac{a}{\mu}} = \sqrt{1\mu} \rightarrow$$

$$9\frac{a^{\mu}}{1\mu} = 1\mu \rightarrow a \leq \pm \kappa$$

۲ a = κ → [a] = κ

سینا وونی دوازدهم سینه ۹۵۷

$$f'(\lambda) \leq \frac{-\mu\lambda + 1}{\mu\sqrt{-\lambda^2 + 1}} \rightarrow \lambda \leq \frac{1}{\mu} \quad \mu > 0$$

$$\frac{\mu\lambda + 1}{\mu\sqrt{\lambda^2 + 1}} \rightarrow \lambda \leq -\frac{1}{\mu} \quad \mu < 0$$

$$\sqrt{a-\mu\lambda} = \mu\sqrt{\lambda}$$

$$\kappa\lambda = a - \mu\lambda \rightarrow \lambda = \frac{a}{\mu}$$

$$f(\frac{a}{\mu}) = \sqrt{\frac{a}{\mu}} + \sqrt{\frac{\mu a}{\mu}} \leq \mu\sqrt{\frac{a}{\mu}} \quad \text{max}$$

-w

$$f(x) = \frac{-x^{\mu} - \mu x^{\mu-1}}{x^{\mu}-1} = \frac{x^{\mu}(x^{\mu}-1)}{x^{\mu}-1} = \frac{x^{\mu}-1}{x^{\mu}-1}$$

$$= \frac{-x^{\mu} + \mu x^{\mu-1}}{x^{\mu}-1}$$

(110)

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

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

-r

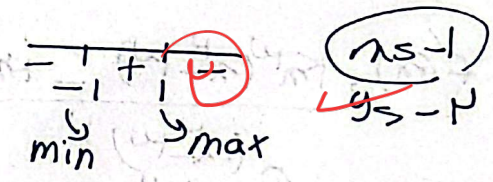
$y' = \mu a x^{\mu-1} + \mu b x^{\mu-1} + c \rightarrow$   
 $y(0) = 0 \rightarrow c = 0$   
 $y'(1) = 0 \rightarrow \mu a + \mu b = 0$   
 $f(1) = a + b + c + d = 1 \rightarrow a + b = 1$   
 $f(0) = d = 0$   
 $a = -b$

-a

$$f(x) = \frac{x^{\mu} - \mu x^{\mu-1}}{x^{\mu}-1}$$

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

$$f'(x) = 0 \rightarrow x^{\mu} \pm 1$$



-y

$$y = \frac{x^{\mu} + \mu a x^{\mu} + b}{x^{\mu}-1}$$

$$y' = \frac{\mu x^{\mu-1} + 4a x^{\mu-1}}{x^{\mu}-1} = 0$$

$$\frac{-\mu x^{\mu-1} + 4a x^{\mu-1}}{x^{\mu}-1} = 0 \rightarrow -\mu + 4a = 0 \rightarrow a = \frac{\mu}{4}$$

$$f(1) = \frac{1 - \mu + b}{1 - 1} = 1 \rightarrow b = \mu$$

$$y' = \frac{\mu x^{\mu-1} + 1}{x^{\mu}-1} = 0 \rightarrow x^{\mu} = \frac{1}{\mu}$$

$$\frac{\mu}{\mu} \times \frac{1}{\mu} - \frac{1}{\mu} + \frac{\mu}{\mu} = \frac{1}{\mu}$$

$$\frac{a}{a+1} \frac{\mu}{\mu} \rightarrow a \mu$$

$$y = \frac{x^{\mu} + \mu}{x^{\mu}-1} = 0 \rightarrow x^{\mu} = \frac{\mu}{\mu}$$

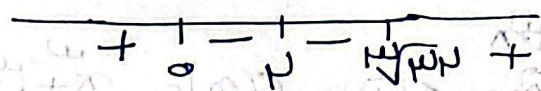
-v

$$f(x) = \frac{x^2}{x^2 + a^2 + 1}$$

فما نلاحظ  $\rightarrow \frac{b}{a} = \mu \rightarrow b < a$

فما نلاحظ  $\rightarrow \frac{b}{a} = \mu$  Ⓜ

$$f'(x) = \frac{f(x)^\mu (x-1) - \mu x^\mu (x^x)}{(x-1)^\mu} = \frac{x^4 - \mu x^\mu - \mu x^4}{(x-1)^\mu} = \frac{x^4 - \mu x^\mu}{(x-1)^\mu}$$



البيانات  $\rightarrow [0, \mu]$   $\rightarrow$  دالة  $\mu$  Ⓜ

$$f'(x) = \frac{f(x)^\mu (x-\mu) - \mu x^\mu (x^\mu)}{(x-\mu)^\mu}$$

$$= \frac{x^\omega - \mu x^\mu - \mu x^\omega}{(x-\mu)^\mu}$$

$$= \frac{\mu x^\omega - \mu x^\mu + 4x}{(x-\mu)^\mu}$$

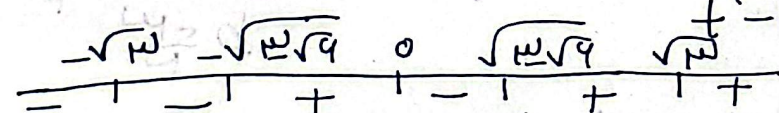
$$\mu x (x^\mu - 4x^\mu + \mu)$$

$\mu < \sqrt{\mu}$   
 $\mu < -\sqrt{\mu}$

$$x^\mu - 4x^\mu + \mu = 0 \Rightarrow x^\mu = t$$

$$t^2 - 4t + \mu = 0$$

$$\frac{4 \pm \sqrt{16 - 4\mu}}{2} = \mu \pm \sqrt{4 - \mu}$$



البيانات  $\mu$

Ⓜ مباين

$$\mu < \sqrt{\mu + \sqrt{4 - \mu}} \times -\sqrt{\mu + \sqrt{4 - \mu}}$$

$$\mu < \sqrt{\mu \sqrt{4 - \mu}} \quad \mu = -\sqrt{\mu - \sqrt{4 - \mu}}$$

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

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

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

تعداد ۲، ۲ - ریشه‌های تک‌معلق و تعداد ۱ صفر ریشه‌ی متو است پس ۳ نقطه‌ی همزاد!