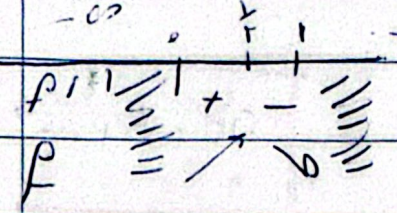


$f(u) = \begin{cases} \sqrt{u-u^2} & u > 0 \\ \sqrt{u+u^2} & u < 0 \end{cases} \quad f'(u) = \begin{cases} \frac{1-2u}{\sqrt{1-2u}} & u > 0 \\ \frac{1+2u}{\sqrt{1+2u}} & u < 0 \end{cases}$



$Df = (-\infty, 1/2] \cup [1, +\infty)$

max $\rightarrow m=1$
min $\rightarrow n=0$

$(\epsilon = 1/2) \rightarrow 0 < \epsilon < 1/2$

$\delta = \epsilon + \epsilon = 2\epsilon$

$y = \sqrt{x} + \sqrt{a-2x}$
 $x=0 \rightarrow y = \sqrt{a}$
 $x = \frac{a}{2} \rightarrow y = \sqrt{\frac{a}{2}}$

$y' = \frac{1}{2\sqrt{x}} - \frac{1}{\sqrt{a-2x}} = 0 \rightarrow \frac{1}{2\sqrt{x}} = \frac{1}{\sqrt{a-2x}}$

$y = \sqrt{\frac{a}{2}} + \sqrt{\frac{a}{2}} = \sqrt{2a}$

$\sqrt{\frac{a}{2}} \times \sqrt{\frac{a}{2}} = \sqrt{a}$
 $[a] = \Sigma$

$f(u) = \frac{x^r}{x^r - 1} |x^r - \epsilon|$

$f(u) = \frac{x^r}{x^r - 1} (x^r - \epsilon) \rightarrow f'(u) = \frac{-(2x)(x^r - \epsilon) + x^r(x^r - 1)}{(x^r - 1)^2}$

$\frac{-2x}{(x^r - 1)^2} x(x^r - \epsilon) + (2x) \left(\frac{x^r}{x^r - 1} \right) = 0$
 $x^r - \epsilon = x^r - x^r$
 $x^r - 2x^r + \epsilon = 0$

s.a.m $\rightarrow \begin{cases} \pm 2x = 0 \rightarrow x = 0 \\ x^r - 2x^r + \epsilon = 0 \rightarrow x \text{ غير صفر}$

$\mu =$ القيمة المتوسطة \leftarrow $\text{ext} \leftarrow \pm 2 \leftarrow$ القيمة المتوسطة

$$y = au^r + bu^r + cu + d \quad A(\dots) \quad B(1,1) \quad (6)$$

$$y' = aru^{r-1} + ru^{r-1} + c$$

$$0 = ar(1) + rb(1)$$

$$ra + rb = 0 \quad \text{طریقہ اولیٰ} \rightarrow a + b = 1$$

$$\frac{ra}{r} + rb + a = 0 \quad \text{در صورتی} \quad \boxed{b = r}$$

$$\boxed{ab = r \times r = -7}$$

$$f(x) = x |r - x| \quad (5)$$

$$\sqrt{r} \rightarrow 0$$

$$-\frac{r}{r} \rightarrow -\frac{r}{r} \left(\frac{r - \frac{r}{2}}{2} \right) = -\frac{r}{2}$$

min (6)

$$f(x) = rx - x^2$$

$$f'(x) = r - 2x \Rightarrow x = \pm 1 \rightarrow x = -1$$

$$\boxed{y = -r}$$

$$y'(-1) = 0 \quad -ru^r + Tan = 0 \quad ra + b = 0 \quad (7)$$

$$-r - 7a = 0$$

$$\boxed{a = -\frac{1}{r}}$$

$$\frac{b}{a} = 1$$

$$f(-1) = 1 \quad -1 = 1 - r + b$$

$$\boxed{b = -\frac{1}{r}}$$

$$\frac{b}{a} = \frac{\frac{1}{r}}{-\frac{1}{r}} = -r$$

$$f(-1) = -r - 7a = 0 \rightarrow \boxed{a = -\frac{1}{r}} \rightarrow \boxed{b = \frac{r}{r}}$$

$$y = \frac{r}{r} u^r + u + \frac{d}{r} \quad \min \left\{ \frac{-b}{ra} = \frac{-r}{ra} = -\frac{1}{r} \right\} \quad (8)$$

$$\frac{au^{r+1}}{r+1} \Rightarrow a = \dots$$

$$(a+1)u + (a-1)$$

$$\frac{r}{k-1}$$

$$y = \frac{r}{k-1}$$

صورت
مخرج

$$\frac{u^{-1}}{e} = \frac{-d}{e} = \frac{1-a}{a+1} = \frac{1}{r} \rightarrow r - ra = -a - 1 \rightarrow ra = r \rightarrow a = r$$

$$\rightarrow y = \frac{ra + r}{ra + 1} \quad y = 0 \rightarrow ra + r = 0 \rightarrow \boxed{a = -\frac{r}{r}}$$

s.a.m

$$\frac{b}{\varepsilon} = r \quad b = 1r \quad r(x + \frac{1}{r})^r \quad \textcircled{7}$$

$$a = \varepsilon \quad r = r u^r + r u + 1 \varepsilon^r$$

$$\frac{b}{a} = \frac{1r}{\varepsilon} = r$$

$$f(x) = \frac{x^r}{x^r - 1} \rightarrow f'(x) = \frac{r x^{r-1} (x^r - 1) - (x^r) (r x^{r-1})}{(x^r - 1)^2} = \dots \quad \textcircled{9}$$

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

کوتاه کردن \sqrt{r} ✓

$$f(x) = \frac{x^r - r}{x^r - r} \rightarrow \frac{r x^{r-1} (x^r - r) - (x^r - r) (r x^{r-1})}{(x^r - r)^2} = \dots \quad \textcircled{10}$$

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

$$\frac{4 \pm \sqrt{r^2} - 1r}{r}$$

$$\frac{-\sqrt{r} \pm \sqrt{r^2 - 4r}}{2}$$