

$f(x) = g(x) = 0 \quad f'(x) = g'(x) \quad g(0) = 1 \quad g'(x) = 0$

شیب  $g = \frac{dy}{dx} = \frac{0-1}{3-0} = -\frac{1}{3}$

$\rightarrow f'(x) = \frac{4}{x^2}$

۱۳

$f = \frac{3}{x} x + \frac{n}{x}$

$f' = \frac{3x^2 + 4x + 3m - 1}{(x+n)^2} \quad x=1 \rightarrow \frac{1+4+3m-1}{14} = \frac{4}{x}$

$\rightarrow 12 = 4 + 3m \rightarrow m = 8$

$\frac{3}{x} + \frac{n}{x} = \frac{1+2+1}{1+3} \rightarrow \frac{3}{x} + \frac{n}{x} = 1 \rightarrow \frac{n}{x} = \frac{1}{x} \rightarrow n = 1$

$m+n = 9$

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~~$f(x) = (3 - \sin x)(9 + \sin x + 3 \sin x)$~~   
 ~~$g(x) = \frac{3 \cos x}{x + \sin x}$~~   
 ~~$f'(x) = -\sin x \cos x - \sin x \cos x = -2 \sin x \cos x$~~   
 ~~$g'(x) = \frac{-3 \sin x (x + \sin x) - \cos x (1 + \cos x)}{(x + \sin x)^2}$~~

بالای منصفه در صفحه  
آتش

۱۵

$m = \frac{1-2}{-1-2} = \frac{1}{3}$

$d \Rightarrow y-1 = \frac{1}{x}(x+1) \Rightarrow y = \frac{1}{x}x + \frac{1}{x}$

$\frac{1}{\sqrt{ax-1}} = \frac{1}{x} \rightarrow \frac{3a}{x} = \sqrt{ax-1} \quad (I)$

$\frac{1}{x}x + \frac{1}{x} = \sqrt{ax-1} \quad (II) \rightarrow \frac{1}{x}x + \frac{1}{x} = \frac{3a}{x}$

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$g'(x) f'(g(x)) = (f \circ g)' = \frac{-1}{\sqrt{|x^0 + |x^0| + |x^0 + |x^0|}}$

$x > 0 \rightarrow f \circ g = \frac{-1}{\sqrt{x^0}} = \frac{-1}{x \sqrt{x}} \rightarrow f \circ g' = \frac{\sqrt{x}}{(x \sqrt{x})^2}$

$x = \frac{1}{\sqrt{x}} \rightarrow \frac{\sqrt{x}}{(\frac{1}{\sqrt{x}})^2} = \sqrt{x} \cdot x = \sqrt{x^3} = \sqrt{\frac{1}{x^3}}$

۵

$$\frac{f(x)-1}{x} = g(x) \rightarrow g(x) = \frac{\left(\frac{-1+\sin x}{1+\sin x}\right)^r - 1}{x} \rightarrow \lim_{x \rightarrow 0} g(x) = \frac{0}{0} \rightarrow \text{Hôpital}$$

$$\lim_{x \rightarrow 0} \left( \frac{-1+\sin x}{1+\sin x} \right)^r \times \left( \frac{\cos x(1+\sin x) - (\cos x(-1+\sin x))}{(1+\sin x)^2} \right) = \frac{r \times (-1) \times (1(1+0) - 1(-1+0))}{(1)^2} = \frac{r \times (-1) \times (1+1)}{1} = (-r) \times (2) = -2r$$

$$y = x^{r+1}$$

$$(-r) \times (r) = -r^2 \rightarrow \text{تجربہ کرنا}$$

$$y^{(1)} = -x^{r-1} \rightarrow y^{(1)} = -r x^r$$

$$-x_1^{r-1} = -x_2^{r-1} \rightarrow x_1^{r-1} = x_2^{r-1} \rightarrow x_1 = \pm x_2 \rightarrow x_1 = -x_2$$

$$\text{Ex. } x_2 = -1 \rightarrow -x_1^{r-1} = -1 \rightarrow x_1 = \pm 1 \rightarrow x_2 = \pm \frac{1}{x_1}$$

$$y^{(1)} = -x^{r-1} \xrightarrow{x=1} -1 = \frac{-a}{r} \rightarrow \text{تجربہ کرنا}$$

$$f(x) = \sqrt{x} \quad (\text{Ex } x^{r+1}) \rightarrow f'(x) = \frac{r}{r} \times (r x^{r+1}) + r \sqrt{x} (\ln x)$$

$$g(x) = a x$$

$$L \approx a x = y$$

~~$$f(x) = \dots$$~~

$$\log_{(x)} \left( \frac{1}{\sqrt{x-1}} \times \left[ \frac{1}{\sqrt{x-1}} \right]^r \right)$$

$$\left( x < \frac{\sqrt{a}}{r} \rightarrow x^r < \frac{a}{r} \rightarrow x^{r-1} < \frac{1}{r} \rightarrow \frac{1}{\sqrt{x-1}} < \frac{1}{r} \rightarrow \frac{1}{\sqrt{x-1}} > r \right)$$

~~$$\dots$$~~

$$\log_{(x)} \left( r \times \frac{1}{\sqrt{x-1}} \right)$$

$$\rightarrow (\log_{(x)})' = r \times \left( \frac{r}{\sqrt{x-1}} \right)^r \times \left( \frac{\sqrt{x-1}}{x} \right) \xrightarrow{x = \frac{\sqrt{a}}{r}} \log'_{(x)} = \frac{r^2}{\sqrt{a}}$$

$$\frac{1}{a}$$

$$L(x) = \frac{(\psi - \sin x)(a + \sin x + \psi \sin x)}{(\psi - \sin x)(\psi + \sin x)} = \frac{a + \sin x + \psi \sin x}{\psi + \sin x}$$

$$\psi g'(x) - L'(x) = (\psi g(x) - L(x))' = \left( \frac{a - a - \sin x - \psi \sin x}{\psi + \sin x} \right)' = \left( \frac{-\sin x (\sin x + \psi)}{\psi + \sin x} \right)'$$

$$= (-\sin x)' = -\cos x \cdot \frac{-1}{\psi}$$