امیرکاشف

۱۹/۵ آبان

$f(0)=1$
$f(3)=5$ ⇒ شیب وتر $=\frac{5-1}{3}=\frac{4}{3}$ ✓ ۵

$f'(3)=$ شیب مماس $=\frac{1}{3}$

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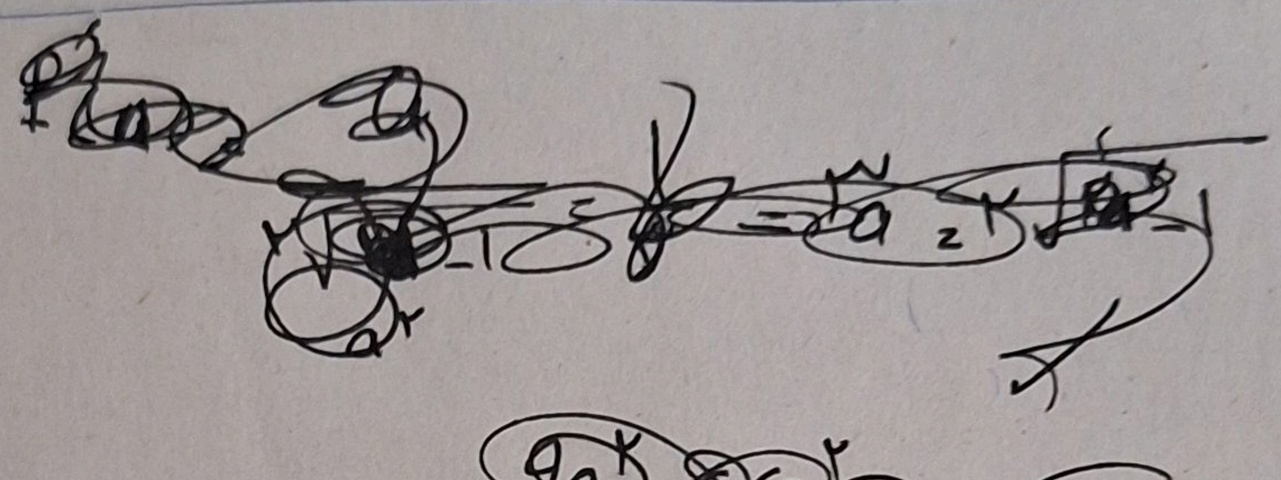

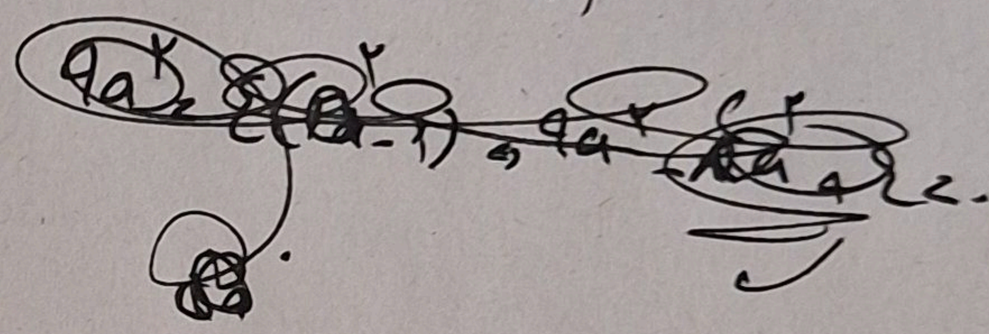

$y-1=\frac{1}{c}(x+1) \Rightarrow y=\frac{1}{c}x+\frac{4}{3}$

$\sqrt{ax-1}=\frac{1}{c}x+\frac{4}{c} \Rightarrow x^2+(1-9a)x+(20-4)=0 \Rightarrow \Delta=0$

$\Rightarrow (1-9a)^2-4(20-4)=0 \Rightarrow a=-\frac{2}{9}$ ✓ ۲

$f(x)=\sqrt{2x-1} \Rightarrow f(0)=3 \Rightarrow a=2$ ✓ ۳

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$g'(1)=\frac{(2+m)(4)-(1)(2+m)}{16}=\frac{8+4m-2-m}{16}=\frac{6+3m}{16}$

$4y-2x=n \xrightarrow{\text{شیب}=\frac{6+3m}{16}} \frac{3}{4}=\frac{6+3m}{16} \Rightarrow 16=24+3m \Rightarrow m=-8$ ✓ ۵

$g(1)=\frac{1+2+1}{4}=1 \Rightarrow \frac{3+n}{4}=1 \Rightarrow 4-n=1 \Rightarrow n=3$

$\Rightarrow m+n=-5$

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$(3\sqrt{5}-1')(\frac{\pi}{2})$

$f(x)=\frac{(3-\sin x)(9+\sin^2 x+3\sin x)}{(3-\sin x)(3+\sin x)}$

$g(x)=\frac{-3\cos x}{(3+\sin x)^2}$

$f'(x)=\frac{(2\sin x\cos x+3\cos x)(4+\sin x)-\cos x(9+\sin^2 x+3\sin x)}{(3+\sin x)^2}$

$(r^{-1}g' - f')(x) = \frac{-9\cos x - 9\sin^2 x \cos x - 9\sin x \cos x}{(r - 9\sin x)^2} \xrightarrow{x = \frac{5\pi}{6}} \frac{-9\frac{\sqrt{3}}{2} - \frac{3}{4} + 9\frac{\sqrt{3}}{2}}{(\frac{9-9\sqrt{3}}{2})^2}$

$=$

$g'(\sqrt[3]{3})\, f'(g(\sqrt[3]{3})) = (f \circ g)'(\sqrt[3]{3})$

$f \circ g(x) = \frac{-1}{3\sqrt{x^2(\frac{1}{x^3})}} = -1 \Rightarrow (f \circ g)'(\sqrt[3]{3}) = (-1)$

$f(x) = x\, g(x) - 1 \Rightarrow g(x) = \frac{f(x) - 1}{x} = \frac{\left(\frac{-1+\sin x}{1+\sin x}\right)^2 - 1}{x}$

$\Rightarrow \lim_{x \to 0} g(x) \overset{\text{هوپیتال}}{=} \frac{2\left(\frac{-1+\sin x}{1+\sin x}\right)\left(\frac{\cos x(1+\sin x) - \cos x(-1+\sin x)}{(1+\sin x)^2}\right)}{1} = 2(-1)\left(\frac{1+1}{1}\right)$

$= -4$

$y = -(x^2+1) \Rightarrow f'(x) = -2x \qquad f'(\alpha) f'(-\alpha) = -1$

$(-2\alpha)(2\alpha) = -1 \Rightarrow \alpha^2 = \frac{1}{4} \xrightarrow{\alpha > 0} \alpha = \frac{1}{2} \Rightarrow f(\frac{1}{2}) = \frac{5}{4}$

عرض نقطه $\frac{5}{4}$ است و $(0,1)$ از محور xها فاصله دارد

$\text{شیب } d = \frac{f(x) - f(0)}{x - 0} = \frac{2\sqrt{x}(x+3)}{x}$

$f'(x) = \frac{x+3}{\sqrt{x}} + 8\sqrt{x}(2\sqrt{x}) \Bigg\} = \frac{2\sqrt{x}(x+3)}{x\sqrt{x}} = \frac{2x^2+6x+18x^2}{x\sqrt{x}}$

$\Rightarrow 8x^2 + 9 = 20x^2 + 3 \Rightarrow 12x^2 = 3 \Rightarrow x^2 = \frac{1}{4} \Rightarrow x = \frac{1}{2}$ (قابل قبول)

$\Rightarrow \text{شیب} = \frac{2\sqrt{\frac{1}{2}}(\frac{1}{4}+3)}{\frac{1}{2}} = \frac{13}{\sqrt{2}} = \frac{13\sqrt{2}}{2}$

$$\alpha' - \left(\frac{\sqrt{\alpha}}{\gamma}\right)^{-} \Rightarrow g(x) \geq \gamma^{\gamma}$$

$$y' = g'(x)\, f'(g(x)) \Rightarrow y'\left(\frac{\sqrt{\alpha}}{\gamma}\right)^{-} = -\frac{\gamma}{\gamma}\sqrt{\alpha}\, f(\gamma^{\gamma}) = -\frac{\gamma}{\gamma}\sqrt{\alpha}\, x^{\gamma}(\xi_1)_{\alpha<\xi<}$$

$$-\frac{\gamma}{\gamma}\Lambda\sqrt{\alpha} \quad \Lambda$$

$$y_1 y_2 \Lambda$$

$$g'(x) = \frac{-\alpha}{(\alpha^{\gamma}-1)\sqrt{\alpha^{\gamma}-1}} \Rightarrow g'\left(\frac{\sqrt{\alpha}}{\gamma}\right) = -\frac{\gamma}{\gamma}\Lambda$$

$$f(x) = \left(\alpha\left[\alpha_x\right]\right)^{\gamma} \Rightarrow f'(x) = \gamma^{\gamma}(\alpha f_{\alpha_1})\left[\alpha_x\right]$$

$$\frac{1}{\alpha}$$

$$\gamma\alpha_{\alpha}{}^{\gamma}{}_{-\alpha-1} \geq 0 \Rightarrow \frac{\gamma^{\alpha}+\gamma}{\gamma\cdot} \Rightarrow \left(\frac{1}{\alpha}\right) \Rightarrow f(\xi) < \frac{\frac{1}{\gamma}}{\frac{1}{\gamma}\alpha_{\gamma}+1} < \left(\frac{\gamma}{\gamma}\right)$$

$$\left(\frac{1}{\alpha}\right)\vee$$

$$\left(\frac{\gamma}{\gamma}\right)\left(\alpha^{\gamma}{}_{-\alpha}\right) = -\frac{\gamma}{\gamma}\alpha^{\gamma}{}_{\alpha<\alpha+\xi}$$

$$\gamma$$

$$\text{ریشه} = f(m) - f(\cdot) = \frac{\sqrt{\alpha}}{\alpha-\cdot} = \frac{\sqrt{\alpha}}{(-\gamma\alpha^{\gamma}+\alpha+1)\,\alpha}$$

$$f(m) = \begin{cases} \frac{-\gamma\alpha^{\gamma}+\alpha+1}{\gamma\sqrt{\alpha}} - \frac{\varepsilon\alpha\sqrt{\alpha}-\sqrt{\alpha}}{(-\varepsilon\alpha+\varepsilon1)(\sqrt{\alpha})} = \frac{\sqrt{\alpha}}{(\alpha^{\gamma}+\alpha+1)\alpha} = \frac{\frac{\gamma}{\gamma}\xi-\alpha+\varepsilon1}{\frac{\gamma}{\gamma}\sqrt{\alpha}\,(-\varepsilon\alpha+\varepsilon1)} \\ \frac{(-\gamma\alpha^{\gamma}+\alpha+1)^{\gamma}}{} \end{cases}$$

$$= \frac{-\gamma\alpha^{\gamma}+\alpha+1+\Lambda\alpha^{\gamma}-\gamma\alpha}{\gamma\sqrt{\alpha}} = \frac{-\frac{\gamma}{\gamma}\alpha^{\gamma}{}_{-\alpha+1}}{\gamma\sqrt{\alpha}}$$

$$۳g - f(x) = \frac{۹}{۳ + \sin x} - \frac{(۳ - \sin x)(۹ + \sin^۲ x + ۳\sin x)}{(۳ - \sin x)(۳ + \sin x)} = \frac{-\sin x(\sin x + ۳)}{\sin x + ۳}$$

$\hookrightarrow -\sin x \xrightarrow{\text{مشتق}} (۳g - f)'(x) = -\cos x \rightsquigarrow -\cos\left(\frac{۴\pi}{۳}\right) = -\frac{۱}{۲}$