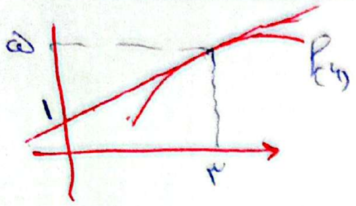
نام و نام خانوادگی ...آیین پیشه فولادگران... پاسخنامه تشریحی تکلیف شماره .... کلاس ...دوازدهم تجربی A...



$f'(3) = ?$

$f(3) = 5$

$y = ax + b$

$3a + 1 = 5 \to a = \frac{4}{3}$

$y = \frac{4}{3}x + 1 \to \boxed{f'(3) = \frac{4}{3}}$ ۱

$f(x) = \sqrt{ax-1}$ $\qquad m_{\text{خط}} = \frac{2-1}{2-(-1)} = \frac{1}{3}$ $\qquad y = \frac{1}{3}x + \frac{4}{3}$

$f'(x) = \frac{1}{3} = \frac{a}{2\sqrt{ax-1}} \to$ Rec $\frac{1}{a} = \frac{a^2}{4ax-4} \to 4ax - 4 = 9a^2$ ۲

$\frac{1}{3}x + \frac{4}{3} = \sqrt{ax-1} \to x^2 + (8-9a)x + 25 = 0 \to \Delta = 0 \to \begin{cases} a = -\frac{4}{9} \ \times \\ a = 2 \to \boxed{f(5) = 3} \end{cases}$

$f(x) = \frac{x^2 + mx + 1}{x+3} \to x = 1 \to \frac{m+2}{4}$ $\Big\}$ $\underset{(1)}{m - n = 1} \to$ $\boxed{m + n = 11}$

$y = \frac{3x+n}{4} \to x = 1 \to \frac{3+n}{4}$ $\quad y' = \frac{3}{4}$ ۳

$f'(x) = \frac{\begin{vmatrix} 1 & m & 1 \\ 0 & 1 & 3 \end{vmatrix}}{} \quad \frac{x^2 + 6x + 3m - 1}{(x+3)^2} = \frac{3}{4} \xrightarrow{x=1} \frac{3m+6}{16} = \frac{3}{4} \to \boxed{m = 2} \ \boxed{n = 5}$

$f(x) = \frac{27 - \sin^3 x}{9 - \sin^2 x} = \frac{\cancel{(3 - \sin x)}(\sin^2 x + 3\sin x + 9)}{(3 + \sin x)\cancel{(3 - \sin x)}} = \frac{\sin^2 x + 3\sin x + 9}{\sin x + 3}$

$\begin{vmatrix} 1 & 3 & 9 \\ 0 & 1 & 3 \end{vmatrix}$ $\quad f'(x) = \frac{\sin^2 x \cos x + 6\sin x \cos x - 9\cos x}{(\sin x + 3)^2} \xrightarrow{x = \frac{5\pi}{3}} \frac{\frac{3}{8} - \frac{3\sqrt{3}}{2} - 9}{\left(-\frac{\sqrt{3}}{2} + 3\right)^2}$ (۲) ۴

$g(x) = \frac{3}{3 + \sin x} \to g'(x) = \frac{-3\cos x}{(\sin x + 3)^2} \xrightarrow{x = \frac{5\pi}{3}} \frac{-\frac{3}{2}}{\left(-\frac{\sqrt{3}}{2} + 3\right)^2}$ (۱)

$\boxed{\frac{-\frac{3}{2} + \frac{3}{8} - \frac{3\sqrt{3}}{2} - 9}{\left(-\frac{\sqrt{3}}{2} + 3\right)^2}}$

$\left(f\left(g\left(\frac{1}{2}\right)\right)\right)' = -1$

$g(x) = \frac{1}{2x^5}$

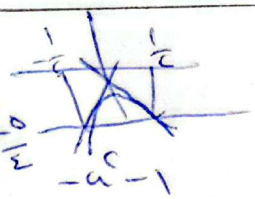
$f(x) = \frac{-1}{\sqrt[5]{2x}}$ $\Big\}$ $f(g(x)) = -x$ ۵

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

$\lim_{x \to 0} g(x)$ صورت $\to \frac{0}{0} \to \frac{\left(\frac{x-1}{x+1}\right)^2 - 1}{x} \to \frac{x^2 - 2x + 1 - x^2 - 2x - 1}{(x+1)^2 x} = \lim_{x\to 0} \frac{-4}{(x+1)^2} = -4$

$y = ax + b$

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



$y = -\frac{5}{4}$

$y = x - \frac{3}{4} \to \boxed{y = -\frac{5}{4}}$ طول از مبدأ

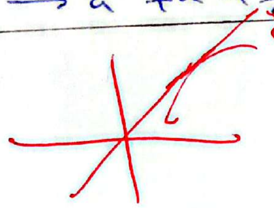
$x = -x - \frac{3}{4}$

$ax + b = -x^2 - 1 \to x^2 + ax + b + 1 = 0 \to \Delta = 0 \to a^2 - 4b - 4 = 0 \to a^2 = 1$ $\boxed{a = \pm 1}$

$-\frac{1}{a}x + b = -x^2 - 1 \to x^2 - \frac{1}{a}x + b + 1 \to \Delta = 0 \to \frac{1}{a^2} - 4b - 4 = 0$

$\to x^2 + x + \frac{1}{4} = 0 \to 4x^2 + 4x + 1 = 0 \to (2x+1)^2 \to \boxed{x = -\frac{1}{2}}$ $\boxed{x = -\frac{1}{2}}$ $b = -\frac{3}{4}$

$y = ax \to a = ?$



$f(x) = 8x^2\sqrt{x} + 6\sqrt{x}$

$f'(x) = 20\sqrt{x^3} + \frac{6}{2\sqrt{x}}$

$\frac{20x^2 + 3}{\sqrt{x}} = a \to a\sqrt{x} = 20x^2 + 3$

$20x^2 - a\sqrt{x} + 3 = 0$

$4 - x = \frac{a}{2\sqrt{x}} = 0 \to x = \sqrt[3]{\left(\frac{a}{80}\right)^2}$

$\frac{a}{80} = y \quad x = \sqrt[3]{y^2} \to 20\sqrt[3]{y^4} - 80y\sqrt[3]{y} + 3 = 0 \to \frac{a}{80} = \sqrt[4]{\frac{1}{80}} \to a = \sqrt[4]{a} \ldots$

$ax = \frac{\sqrt{x}}{-2x^2 + x + 1} \to -2ax^3 + ax^2 + ax - \sqrt{x} = 0$ مشتق $-8ax^2 + 2ax + a - \frac{1}{2\sqrt{x}} = 0$

$g'\left(\frac{\sqrt{5}}{2}\right) f'\left(g\left(\frac{\sqrt{5}}{2}\right)\right) \to g'\left(\frac{\sqrt{5}}{2}\right) f'(2) = ? \to 12 g'\left(\frac{\sqrt{5}}{2}\right) \to -48\sqrt{5}$

$g' = \frac{\frac{-2x}{2\sqrt{x^2-1}}}{x^2-1} = \frac{\frac{-\sqrt{5}}{2}}{\frac{1}{8}} = \boxed{-4\sqrt{5}}$

$\frac{-48\sqrt{5}}{-48\sqrt{5}} = 1$