نام و نام خانوادگی ...محمد پارسا آخوندی.... پاسخنامه تشریحی تکلیف شماره ۲۳..... کلاس ....

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$$g'\left(\frac{\pi}{4}\right) = \left(2\times\left(1+\tan^2\left(\frac{\pi}{4}\right)\right) - \sqrt{2}\sin\left(\frac{\pi}{4}\right)\right)\times f'(2) = \sqrt{3}$$

$$3 \longrightarrow 3\times f'(2) = \sqrt{3}$$

$$f'(2) = \frac{\sqrt{3}}{3}$$

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$$f'(x) = \frac{-36\cos^2 x\sin x}{(4-\cos^3 x)^2}$$

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

$$x = \left(\frac{7\pi}{6}\right) \to f'\left(\frac{7\pi}{6}\right) - 2g'\left(\frac{7\pi}{6}\right) =$$

$$\frac{864}{1551+192\sqrt{3}} + \frac{8}{19+8\sqrt{3}}$$

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$$f'_+(x) \longrightarrow 4\sqrt{ax} + \frac{a}{2\sqrt{ax}}\cdot(4x-3) = \frac{3a}{\sqrt{\frac{3a}{4}}}$$

$$f'_-(x) \longrightarrow -4ax + \frac{a}{2\sqrt{ax}}(3-4x) = \frac{-3a}{\sqrt{\frac{3a}{4}}}$$

$$\longrightarrow \frac{6a}{\sqrt{\frac{3a}{4}}}$$

$$\frac{\cancel{6}^{3}a}{\sqrt{\frac{3a}{4}}} = \cancel{2}\sqrt{6} \to 3a = \sqrt{\frac{9a}{2}} \to 18a^2 = 9a \to 2a = 1 \to a = \frac{1}{2}$$

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$$(2-4a) + (-a) = -1 \longrightarrow 3 = 5a \to a = \frac{3}{5}$$

$$f'(4) = -\frac{3}{5}$$

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$$y_1 = \frac{x+5}{7} \longrightarrow m = \frac{1}{7}$$

$$y_2 = \frac{(a(3x+1)) - (3(ax-1))}{(3x+1)^2}$$

$$\frac{1}{7} = \frac{a+3}{9x^2+6x+1}$$

$$7a+21 = (3x+1)^2,\quad \frac{ax-1}{3x+1} = \frac{x+5}{7}$$

$$7a^2 - 32a + 16 = 0 \to a = 4,\ \cancel{\frac{4}{7}}$$

$f(2)=8+2a-b=0$ $f'(2)=12+a=0$ $\left.\right\}\ \underbrace{a=-12\ ,\ b=-16}$ $b-a=-16-(-12)=-4$	۶
$\sin x^2 \sim x^2 \longrightarrow f'(x)=2nx^{2n} \longrightarrow f(x)\,f'(x)=2nx^{4n-1}$ $1-\cos x \sim \frac{x^2}{2} \longrightarrow (1-\cos x)^m=\frac{x^{2m}}{2^m}$ $\longrightarrow$ $2m+n=9$ $\lim \longrightarrow 2n\times 2^m \times x^{4n-1-2m} \longrightarrow 4n-1-2m=0 \longrightarrow 2m=4n-1$ $2n\times 2^m=32\sqrt{2} \longrightarrow m=\frac{4n-1}{2} \longrightarrow 2n\times 2^{\frac{(4n-1)}{2}}=2^5\times 2^{\frac{1}{2}} \longrightarrow m=\frac{7}{2}\ ,\ n=2$	۷
$f^{-1}(x) \Longrightarrow x=\frac{\sqrt{y}+1}{\sqrt{y}-1} \longrightarrow \sqrt{y}\,x-x=\sqrt{y}+1 \longrightarrow \sqrt{y}\,(x-1)=x+1$ $\sqrt{y}=\frac{x+1}{x-1} \longrightarrow y=\left(\frac{x+1}{x-1}\right)^2 \xrightarrow{\text{مشتق}} 2\times\left(\frac{(x-1)-(x+1)}{(x-1)^2}\right)\times\left(\frac{x+1}{x-1}\right)$ $x=2 \longrightarrow 2\times\left(\frac{-2}{1}\right)\times\left(\frac{3}{1}\right)=-12$	۸
$\frac{f(0)-f(-1)}{1}=\frac{1-(8-8a)}{1}=-11 \longrightarrow 8a-7=-11 \longrightarrow a=-\frac{1}{2}$ $x=1 \longrightarrow 3\times 2\times (2)^2\times\left(-\frac{1}{2}+1\right)+\cancel{(a)}\,\cancel{(x^2+1)}^{-\frac{1}{2}}$ 8 $24\times\frac{1}{2}=12+4=8$	۹
$\frac{f(\frac{\pi}{2})-f(\frac{\pi}{4})}{\frac{\pi}{4}}=\frac{-1-0}{}=\frac{-1}{\frac{\pi}{4}}=\frac{-4}{\pi}$ $\frac{f(\frac{\pi}{2})-f(\frac{\pi}{4})}{\frac{\pi}{4}}=\frac{1-0}{\frac{\pi}{4}}=\frac{4}{\pi}$ $\left.\right\}\ \frac{\frac{-4}{\pi}}{\frac{4}{\pi}}=-1$	۱۰

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