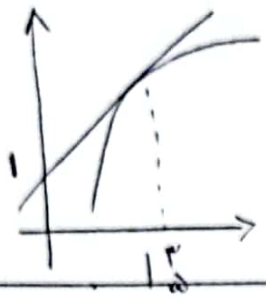
آیدا نامداری
دوازدهم ریاضی
تکلیف ۲۴

۱



$f'(۳)=\frac{۴}{۳}$ → شیب خط مماس

$\sqrt{۹}=$ (۳)

۲

$f(ω)=\sqrt{ωa-1}$

$\frac{x+۴}{۳}=\sqrt{ax-1}$

$a=\frac{۲x+۸}{۹}$

$\frac{a}{۲\sqrt{ax-1}}=\frac{1}{۳}$

$\frac{a}{۲(\frac{x+۴}{۳})}=\frac{1}{۳}$

$\frac{۳a}{۲x+۸}=\frac{1}{۳}$

$f'(\quad)=\frac{1}{۳}$

$\frac{1}{۳}x+\frac{۴}{۳}$

۳

$\frac{(۲+m)(۴)-(۲+m)}{(x+۳)^۲}=\frac{(۲x+m)(x+۳)-(x^۲+mx+1)}{(x+۳)^۲}$

$\frac{۸+۴m-۲-m}{۱۶}=\frac{۳}{۴}$

$y=\frac{۳x+n}{۴}$ شیب $=\frac{۳}{۴}$

$\frac{x^۲+۲x+1}{x+1}=\frac{۴}{۲}=۲$ $f(1)$

$\frac{۳m+۴}{۱۶}=\frac{۳}{۴}$

$۱۲=۳m+۴$

$m=۲$

$f(1)=۲$ $\frac{۳+n}{۴}=۲$ $n=ω$

$m+n=ω+۲$ ۷

۴

$f(x)=\frac{۲۷-\sin^۳x}{۹-\sin^۲x}$ $\frac{(۳-\sin)(۹+\sin^۲+۳\sin)}{(۳+\sin)(۳-\sin)}$ $f'(x)$ $\frac{۲\sin(۲\cos)+۳}{۲x-\frac{\sqrt{۳}}{۲}\alpha\frac{\cos}{۲}+۳^{\frac{۷}{۲}}}$

$g(x)=\frac{۳}{۳+\sin m}$ $g'(x)=\frac{-\cos(۳)}{(۳+\sin)^۲}$ $\frac{-۳\times\frac{1}{۲}}{(۳-\frac{\sqrt{۳}}{۲})^۲}$ $\frac{1}{۲}$ $-۷\sqrt{۳}$ $\frac{1}{۲}$

$\sin(\frac{۵\pi}{۳})=-\frac{\sqrt{۳}}{۲}$

$\cos(۵\frac{\pi}{۳})=+\frac{1}{۲}$

$۲g'(\frac{۵\pi}{۳})-f'(\frac{ω\pi}{۳})$

$\frac{\frac{۳}{۴}-۳\sqrt{۳}+\frac{۳}{۲}+۹}{\frac{۳ω}{۴}-۳\sqrt{۳}}$

$-۷\sqrt{۳}$

۵

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

$-\frac{1}{\sqrt{۲x}}$ $\frac{1}{۲x^ω}$

$g'(\sqrt[ω]{۳})\times f'(g(\sqrt[ω]{۳}))=(fog)'$

$-\frac{1}{\sqrt{\frac{۲}{۲x^ω}}}$ $-\frac{1}{\sqrt{\frac{1}{x^ω}}}=-\frac{1}{\sqrt{۳}}$

$-\sqrt{۳}$

$f(x) = x\,g(x) + 1$

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

$\lim_{x \to 0} \frac{\left(\frac{-1+\sin x}{1+\sin x}\right)^2 - 1}{x} \xrightarrow[\frac{0}{0}]{\text{hop}}$ $\quad 2\left(\frac{-1+\sin}{1+\sin}\right)\left(\frac{\cos(1+\sin) - (\cos)(-1+\sin)}{(1+\sin)^2}\right)$

$-2(2)(-4)\ \frac{2}{1} = 2$

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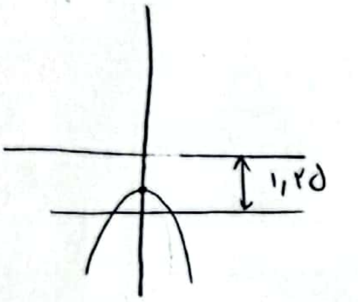
قرینه $= -x^2 - 1 \qquad -2x$

$-\frac{1}{4} - 1 = -\frac{5}{4} = -1{,}25$



$f'(a) \times f'(-a) = -1 \qquad (-2a)(2a) = -4a^2 \qquad a = \pm\frac{1}{2}$

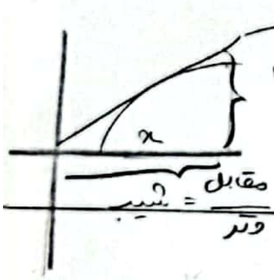
$f(\frac{1}{2}) = \frac{\frac{2}{\sqrt{2}}(4)}{\frac{1}{2}} \quad \frac{8}{\sqrt{2}} \quad \frac{16}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} \quad \frac{16\sqrt{2}}{2} = 8\sqrt{2}$

8

$16x\sqrt{x} \qquad x\,2\sqrt{x}$

$f(x) = 2\sqrt{x}\,(4x^2+3) \qquad \frac{2}{2\sqrt{x}}(4x^2+3) + (8x)(2\sqrt{x}) = \frac{2\sqrt{x}(4x^2+3)}{x}$

$ax+b \ \dot{\mid}\ \to ax$



$\frac{8x^2+6+32x^2}{2\sqrt{x}} = \frac{2\sqrt{x}(4x^2+3)}{x} \quad 4x$

$8x^3 + 6x + 32x^3 = 16x^3 + 12x \qquad 24x^2 = 6$

$8x^2 + 6 + 32x^2 = 16x^2 + 12$

$x^2 = \frac{1}{4} \qquad x = \pm\frac{1}{2}$ مثبت قبوله به خاطر رادیکال

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$f'(x) = \frac{\frac{1}{2\sqrt{x}} \times (-2x^2+x+1) - (-4x+1)(\sqrt{x})}{(-2x^2+x+1)^2} = \frac{\sqrt{x}}{(-2x^2+x+1)\,x}$

$2\sqrt{x}\cdot x$

$\frac{x}{2\sqrt{x}}(-2x^2+x+1) - (4x\sqrt{x} - x\sqrt{x}) = \frac{\sqrt{x}}{2x}(-2x^2+x+1)$

$\frac{-2x^3+x^2+x}{2\sqrt{x}} + \frac{8x^3-2x^2}{2\sqrt{x}} = -4x^3+2x^2+2x$

$f(\frac{1}{2}) \quad \frac{\sqrt{\frac{1}{2}}}{-\frac{1}{2}+\frac{1}{2}+1} = \frac{\sqrt{2}}{2}$

$6x^3 - x^2 + x = -4x^3 + 2x^2 + 2x$

$10x^3 - 3x^2 - x = 0$

$x(10x^2 - 3x - 1) = 0 \qquad \frac{3+7}{20},\ \frac{3-7}{20}$

$9 - 4(10)(-1) = \qquad \frac{1}{2}\ ✓ \quad -\frac{1}{5}\ ✗$

$$f(x) = (x[x])^{۳}$$

$$g(x) = \frac{۱}{\sqrt{x^{۲}-۱}}$$

$$fog = \left(\frac{۱}{\sqrt{x^{۲}-۱}} \left[\frac{۱}{\sqrt{x^{۲}-۱}} \right] \right)^{۳}$$

$$(fog)' \longrightarrow \left(\frac{۲}{\sqrt{x^{۲}-۱}} \right)^{۳} = ۳ \left(\frac{۲}{\sqrt{x^{۲}-۱}} \right)^{۲} \times \frac{-\frac{۲x}{۲\sqrt{x^{۲}-۱}} \times ۲ \times \frac{-۲ \times \frac{\sqrt{۵}}{۲} \times ۲}{۲}}{x^{۲}-۱}$$

$$\frac{۳ \times ۱۹ \times -۸\sqrt{۳}}{-۶۸\sqrt{۳}} = ۸$$