Subject :
Year . Month . Date . ( )

به نام خدا (با عرض زنتی)

۱- $m = \frac{a-1}{۳} = \frac{۴}{۳}$ $\quad y = \frac{۴}{۳}x + ۱$ $\quad \boxed{\frac{۴}{۳}}$

۲- $m = \frac{۲-۱}{۲+۱} = \frac{۱}{۳}$ $\quad y = \frac{۱}{۳}x + \frac{۴}{۳}$ $\quad f(a) = \sqrt{۹} = ۳$

$\sqrt{۹x-۱} = \frac{x+۴}{۳}$ $\xrightarrow{\text{توان ۲}}$ $۹x-۱ = \frac{x^۲+۸x+۱۶}{۹}$

$x^۲ + (۸-۹a)x + ۲۵$ $\quad a = ۲$

۳- $y = \frac{۳x+h}{۴}$ $\quad ۱ = \frac{۳+h}{۴} \rightarrow h = ۱$

$y'(۱) = \frac{۳m+۶}{۱۶} = \frac{۳}{۴}$ $\quad m = ۲$ $\quad \boxed{۳}$

۴-

$\left(\frac{۵\pi}{۳}\right)' = \left(\frac{-۶\sin x(\sin x+۳)}{\sin x+۳}\right)$ $\quad \frac{(۳-\sin x)(\sin^۲x+۳\sin x+۹)}{(۳-\sin x)(\sin x+۳)}$

$\cos\frac{۵\pi}{۳} = \frac{۱}{۲}$

۵- $f(x) = \frac{-۱}{\sqrt[۵]{x+|x|}}$ $\quad g(x) = \frac{۱}{x^۵+|x^۵|}$

$(f\circ g)\sqrt[۵]{۳} = -۱$ $\quad \frac{-۱}{\sqrt[۵]{۲x۱}} = -x$

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$g(x) = \frac{f(x) - 1}{x}$ $\quad g(x) = \frac{1+\sin^2 x - 2\sin x - 1 - \sin^2 x - 2\sin x}{(1+\sin x)^2 x}$ $\quad -۶$

$= \frac{-4\sin x}{x(1+\sin x)^2}$ $\quad \lim_{x \to 0} \frac{-4\sin x}{x(1+\sin x)^2} \to \boxed{-4}$

$y = -x^2 - 1 \quad y' = -2x$ $\quad -۷$

$f'(x) = 20x\sqrt{x} + \frac{3}{\sqrt{x}}$ $\quad (a, da)$ $\quad -۸$

$f(a) = 8a^2\sqrt{a} + 4\sqrt{a} = da \quad da = 8a^2\sqrt{5} + 4\sqrt{a}$

$x = +\frac{1}{2}$ $\quad 9 - \frac{1}{2}$ $\quad f'(+\frac{1}{2}) = \frac{d}{2} = \frac{8}{\sqrt{2}} \quad d = \frac{8 \times 2}{\sqrt{2}} = \boxed{8\sqrt{2}}$

-۹

-۱۰

$[x] = 2 \quad (fog)' = \left(\frac{-2}{\sqrt{x-1}}\right)' \quad \frac{4\sqrt{a}}{\frac{1}{2}} = 16\sqrt{a}$

$\frac{16\sqrt{a}}{-48\sqrt{a}} = \boxed{-\frac{1}{3}}$

PCO