No.

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Pbp Quiz B

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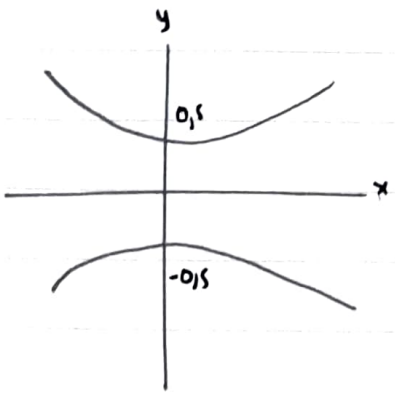
ALDEN LUTHFI

① a. $1 = 4y^2 - x^2$

$\rightarrow 1 = \frac{y^2}{\frac{1}{4}} - \frac{x^2}{1}$ → hiperbola



② a. $\lim_{(x,y)\to(0,0)} \frac{e^x - e^y}{e^x + e^y} = \frac{e^0 - e^0}{e^0 + e^0} = \frac{0}{1} = 0$

③ $D_u f(x,y) = \langle 2x\ln y + y^2, \frac{x^2}{y} + 2xy \rangle \cdot \frac{1}{\sqrt{2}}[\langle 1,1 \rangle]$

$= \frac{2x\ln y + y^2}{\sqrt{2}} + \frac{x^2 + 2xy^2}{y\sqrt{2}}$

$D_u f(-1,2) = \frac{-2\ln(2) + 4}{\sqrt{2}} + \frac{-7}{2\sqrt{2}}$

④ a. bidang singgung

$z - z_0 = f_x(x_0,y_0)(x - x_0) + f_y(x_0,y_0)(y - y_0)$

$f_x(x,y) = 3x^2\sin y + -\frac{\cos 2y}{x^2}$, $f_y(x,y) = x^3\cos y - \frac{2\sin 2y}{x}$

$f_x(\frac{1}{2},\pi) = -4$, $f_y(\frac{1}{2},\pi) = \frac{1}{8} \cdot -1 = -\frac{1}{8}$

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$z_1 = f(\frac{1}{2}, \pi) = \frac{1}{8}0 + 2 = 2$

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$z - 2 = (x - \frac{1}{2})(-4) + (-\frac{1}{8})(y - \pi)$

(5.) (a.) $\frac{dw}{dt} = \frac{\partial w}{\partial x}\frac{dx}{dt} + \frac{dw}{dy}\frac{dy}{dt} + \frac{dw}{dz}\frac{dz}{dt}$

$\frac{dw}{dx} = e^{\frac{\sqrt{y}}{z}}$ $\frac{dy}{dz} = xe^{\frac{\sqrt{y}}{z}} \cdot \frac{1}{2\sqrt{y}z}$ $\frac{dz}{dt} = xe^{\frac{\sqrt{y}}{z}} \cdot -\frac{\sqrt{y}}{z^2}$

$\frac{dx}{dt} = \frac{1}{2\sqrt{t}}$ $\frac{dy}{dt} = \ln t + 1$ $\frac{dz}{dt} = \cos t^2 \cdot 2t$

$\frac{dw}{dt} = \frac{e^{\frac{\sqrt{y}}{z}}}{2x} + \frac{xe^{\frac{\sqrt{y}}{z}}(\ln t + 1)}{2z\sqrt{y}} + \frac{xe^{\frac{\sqrt{y}}{z}}(-\sqrt{y})}{z^2} \cdot \cos t^2 \cdot 2t$