Question

Find the slopes of the tangents to the curves of intersections of the planes x=0, y=2 and the surface z= x^3 + e^(yx) at the point (0,2,1).

Solution

$$\frac{\partial z}{\partial x} = 3x^2 + ye^{x \cdot y}$$

$\frac{\partial z}{\partial x}(0,2) = 2.$

$$\frac{\partial z}{\partial y} = xe^{x \cdot y}$$

$\frac{\partial z}{\partial y}(0,2) = 0.$

Answer: The requested slopes of the tangents to the curves of intersections of the planes x=0, y=2 and the surface are $\frac{\partial z}{\partial x}(0,2) = 2$, $\frac{\partial z}{\partial y}(0,2) = 0$.