

Sia $f(x, y, z) = x^2 e^{-3y} \sin(4z)$; calcolare

$$\frac{\partial^3 f}{\partial x \partial z^2}(x, y).$$

SOLUZIONE. Si ha che

$$\frac{\partial f}{\partial z}(x, y) = 4x^2 e^{-3y} \cos(4z), \quad \frac{\partial^2 f}{\partial z^2}(x, y) = -16x^2 e^{-3y} \sin(4z);$$

$$\frac{\partial^3 f}{\partial x \partial z^2}(x, y) = -32x e^{-3y} \sin(4z).$$