Sia $f(x,y) = e^{-10x}\cos(9y)$*; calcolare*

$$\frac{\partial^2 f}{\partial x^2}(0,0) + \frac{\partial^2 f}{\partial y^2}(0,0).$$

SOLUZIONE. Si ha che

$$\frac{\partial f}{\partial x}(x,y) = -10e^{-10x}, \quad \frac{\partial^2 f}{\partial x^2}(x,y) = 100e^{-10x};$$

$$\frac{\partial f}{\partial y}(x,y) = -9\sin(9y), \quad \frac{\partial^2 f}{\partial y^2}(x,y) = -81\cos(9y).$$

Quindi

$$\frac{\partial^2 f}{\partial x^2}(0,0) + \frac{\partial^2 f}{\partial y^2}(0,0) = 19.$$