Exercise 1

Verify Stokes’ Theorem for \( f(x,y,z) = z \mathbf{i} + x \mathbf{j} + y \mathbf{k} \) when \( \Sigma \) is the paraboloid \( z = x^2 + y^2 \) such that \( z \leq 1 \)
Exercise 2

Evaluate the surface integral

$$\int\int_S (1 + z) \, dS,$$

where $S$ is that part of the plane $x + y + 2z = 2$ in the first octant.