Exercise 1. Let \( F(x, y, z) = (2xz, 2yz, x^2 + y^2) \).

1. Show that \( F \) is conservative and find a potential of \( F \).
2. Evaluate the line integral \( \int_{(0,0,0)}^{(0,0,0)} F \cdot dR \).

Exercise 2. Let \( D \) be the region bounded by the ellipse \( \frac{x^2}{9} + \frac{y^2}{4} = 1 \). Using Green’s Theorem, evaluate the double integral \( \iint_D x^2 dA \).