1. Given \( w = \sqrt{u^2 + v^2 + z^2} \) and \( u = 3e^t \sin s, v = 3e^t \cos s \) and \( z = 4e^t \), find \( \frac{\partial w}{\partial s} \) and \( \frac{\partial w}{\partial t} \).

2. Assume that \( z = z(x, y) \) satisfy the equation \( x^5 + xy^2z + yz^3 = 3 \). Find \( \frac{\partial z}{\partial x} \) and \( \frac{\partial z}{\partial y} \).

3. (Continuation of Problem 2) Given a surface with the equation \( x^5 + xy^2z + yz^3 = 3 \), find an equation of the plane tangent to this surface at the point \( P(1, 1, 1) \).