A. Compute \( \nabla f \), the gradient of \( f \), at \((1, 1, 0)\) if \( f(x, y, z) = x^3 y + \sqrt{x + z} - e^{xz} \).

B. Find the equation of the plane tangent to the surface with equation \( x^3 y + \sqrt{x + z} - e^{xz} = 1 \) at the point \((1, 1, 0)\).

C. Find the directional derivative of \( f \) at \((1, 1, 0)\) in the direction \( \mathbf{u} = \frac{1}{\sqrt{3}} (\mathbf{i} + \mathbf{j} - \mathbf{k}) \).