1. Given the integral \( \int_{0}^{1} \int_{0}^{1-x^2-z^2} dy \ dz \ dx \), write the limits on the equivalent integrals \( \int \int \int dx \ dz \ dy \) and \( \int \int \int dy \ dz \ dx \).

2. Use cylindrical coordinates to find the volume of the region that lies between \( z = 24 - x^2 - y^2 \) and \( z = 2 \sqrt{x^2 + y^2} \).

3. Evaluate \( \int \int \int_E \sqrt{x^2 + y^2 + z^2} \ dv \), where \( E \) lies above \( z = \sqrt{x^2 + y^2} \) and between \( x^2 + y^2 + z^2 = 1 \) and \( x^2 + y^2 + z^2 = 4 \).