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- 1. Write the integral $\iiint_E xz \, dV$, where E is the finite region in the first octant bounded by the coordinate planes and $x^2 + y^2 + z^2 = 4$, as an iterated integral using spherical coordinates. (You need not evaluate the integral.)

2. Use cylindrical coordinates to compute the moment of inertia about the z-axis of the region inside cylinder $x^2 + y^2 = 1$ and between the planes z = 1 and z = 3 if the density is given by $\rho(x,y,z) = 2(x^2 + y^2)$.