Problem 1. Consider the solid region bounded by the plane $2x + y + z = 2$ and the three coordinate planes.

(a) (3 points) Set up the integral for computing the volume of this region (express the bounds for y as functions of x, and the bounds for z as functions of x, y).

(b) (2 points) Evaluate the integral.

Problem 2. (5 points) Let D be the solid region in the first octant bounded by the spheres $x^2 + y^2 + z^2 = 4$ and $x^2 + y^2 + z^2 = 16$. Set up the integral $\int \int \int_D (x^2 + z + 1) \, dV$ in spherical coordinates (You don't need to evaluate it).