ME 201: Tutorial #7
Triple Integral, center of mass, and moment of inertia.

1. Find the volume of this region inside the positive part of the cone $z^2 = 3x^2 + 3y^2$ and the sphere $z^2 + x^2 + y^2 = 4$. Using:
   - **a.** Cylindrical coordinates.
   - **b.** Spherical coordinates.

2. Find the center of mass and the moment of inertia about the *z*-axis of the cylindrical shell of height *h*, inner radius R_1, outer radius R_2, that is coaxial about the *z*-axis with one face resting on the *xy*-plane.

3. Find the center of mass of the first octant part of the ball with a radius a.