Math 001D Assignment 15.8 Ans_____

Instructions: Write complete solutions to the following problems in the space provided. Be sure to supply all the necessary steps that lead to your answers

1. Evaluate $\iiint_E \sqrt{x^2+y^2}\,dv$ where is the region that lies inside the cylinder and between the planes: $x^2+y^2=4,\ z=-2,\ z=3$ Ans_____

2. Find the volume of the solid that lies between both the cylinder and the sphere $x^2+y^2=4,$ and $x^2+y^2+z^2=9$ Ans_____

3. Evaluate the integral by changing to cylindrical coordinates. Ans_____

$$\int_{-3}^{3}\int_{0}^{\sqrt{9-x^2}}\int_{0}^{9-x^2-y^2}\sqrt{x^2+y^2}\,dzdydx$$

4. Find the mass of the solid that lies between both the cone and the sphere, Ans_____

$z=\sqrt{x^2+y^2}$, $x^2+y^2+z^2=2$, if the density at any point is proportional to its distance from the xy plane.