

Quiz 7

- 1) Evaluate the integral $\int_{-1}^1 \int_0^{\sqrt{1-y^2}} \int_{x^2+y^2}^{\sqrt{x^2+y^2}} xz \, dz dx dy$ by using the cylindrical coordinates.

(10 points)

- 2) Consider the solid above the xy – plane that is outside the sphere $\rho = 2\cos(\phi)$ and inside the sphere $\rho = 2$.

- a) To give intuition for what the solid looks like, convert $\rho = 2\cos(\phi)$ into rectangular coordinates (Drawing a picture of the solid is optional).

(3 points)

- b) Write down (but do not evaluate) an integral in spherical coordinates which gives the volume of the solid.

(7 points)