

MATH 251 – QUIZ 8

Question 1: (5 points)

Calculate the following integral, where E is the region inside $x^2 + z^2 = 4$ and between the planes $y + z = 4$ and $y = 6$. Include a picture of E

$$\int \int \int_E 4 \, dx \, dy \, dz$$

Question 2: (5 points)

Calculate the following integral, where E is the region between the spheres $x^2 + y^2 + z^2 = 1$ and $x^2 + y^2 + z^2 = 4$, above the surface $z = \sqrt{x^2 + y^2}$, in the first octant. Include a picture of E

$$\int \int \int_E x^2 + y^2 + z^2 \, dx \, dy \, dz$$