

QUIZ #4, Math 253

1. Determine the volume of the solid that lies above the rectangle $0 \leq x \leq 1, 0 \leq y \leq 2$ in the x, y plane and below the surface $z = 5 - x^2 - y^2$.
2. Evaluate the double integral $\int \int_D 6xy \, dA$, where D is the triangle with vertices $(0, 0)$, $(1, 1)$ and $(0, 2)$.
3. Evaluate the iterated integral $\int_{y=0}^{y=1} \int_{x=0}^{x=y} 2x\sqrt{1+y^3} \, dx \, dy$