

Math 225 : Quiz

Dec. 9, 1991

Show your work and circle your final answer.

1. Compute the surface area of the part of the sphere $x^2 + y^2 + z^2 = 5$ above the plane $z = 1$.

2. Find the flux of $\mathbf{F} = xz \mathbf{i} + z^2 \mathbf{j}$ outward through the surface Σ cut from the semicircular cylinder $x^2 + z^2 = 1, z \geq 0$, by the planes $y = 0$ and $y = 1$.