Math 225: Calculus III   Name:_____

Quiz 10   *April 23/25, 1996*   Section:_____

1. Let   be the unit circle oriented counterclockwise and let   be the outward unit normal vector to . Compute the flux integral $\int_{\mathcal{C}} \cdot \, ds$ where

   $$= e^{-y^2}(2xy\imath + \jmath).$$

2. Determine the surface area of the portion of the paraboloid $y = x^2 + z^2$ inside the cylinder $x^2 + z^2 = 1$.