

**Math 225: Calculus III**  
**Quiz 9** December 6, 2001

Name: \_\_\_\_\_  
Section: \_\_\_\_\_

Let  $S$  be the the part of the surface  $z = \sqrt{x^2 + y^2}$  in the first octant below  $z = 1$ .

(a) Compute the surface integral  $\iint_S xyz \, dS$ .

(b) Compute the flux integral  $\iint_S \mathbf{F} \cdot \mathbf{n} \, dS$  where  $\mathbf{F} = x\mathbf{i} + y\mathbf{j} + z\mathbf{k}$ , and  $\mathbf{n}$  is the *downward* unit normal.