

QUIZ 5  
(December, 2008)

NAME: .....

Problem 1. Evaluate the surface integral  $\iint_S \vec{F} \cdot \vec{n} dS$  where

$$\vec{F} = \langle z^{1001}y^2, y + e^x, e^xy \rangle$$

and  $S$  is the surface of the solid tetrahedron bounded by the coordinate planes  $x = 0$ ,  $y = 0$ ,  $z = 0$ , and  $2x + y + z = 2$  (oriented by the inward normal).

How will the answer change if we orient  $S$  by the outward normal?