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

Section:

## Quiz 10

1. Choose the correct answer.  $\int\int_{\mathcal{S}}\mathbf{F}\cdot d\mathbf{S}$  is zero if (1 pt.)

- (a) **F** is tangent to S at every point.
- (b) **F** is perpendicular to S at every point.
- 2. Compute  $\int \int_{\mathcal{S}} \mathbf{F} \cdot d\mathbf{S}$  for  $\mathbf{F} = y^2 \mathbf{i} + 2\mathbf{j} x\mathbf{k}$ , where  $\mathcal{S}$  is given by the portion of the plane x + y + z = 1 in the octant  $x, y, z \ge 0$ , with upward-pointing normal. (9 pt.)