

Name:

1. Compute the surface integral $\iint_S \mathbf{F} \cdot d\mathbf{S}$, where $\mathbf{F}(x, y, z) = \langle y, x, z^2 \rangle$, and $\mathbf{r}(u, v) = \langle u \cos v, u \sin v, v \rangle$, for $u \in [0, 1], v \in [0, \pi]$.