

Quiz 11, M273-03, Fall 2011**Name:** _____

1. Find a potential function for $\mathbf{F} = \langle yze^{xy}, xze^{xy} - z, e^{xy} - y \rangle$ or determine that \mathbf{F} is not conservative.

2. Calculate $\iint_{\mathcal{S}} z^2 dS$, where \mathcal{S} is the part of the plane $x + y + z = 0$ contained in the cylinder $x^2 + y^2 \leq 1$.