Problems: Divergence Theorem

Let S_1 be the part of the paraboloid $z = 1 - x^2 - y^2$ which is above the xy-plane and S_2 be the unit disk in the xy-plane. Use the divergence theorem to find the flux of $\mathbf{F}$ upward through S_1, where $\mathbf{F} = \langle yz, xz, xy \rangle$.

18.02SC Multivariable Calculus
Fall 2010