1. (10 points) Let \( F = (y - z, z - x, x - y) \) and let \( S \) be the union of \( x^2 + z^2 = 4, 0 \leq y \leq 1 \) and \( x^2 + y^2 + z^2 = 4, y \leq 0 \), oriented so that the normal at \((0, 0, 2)\) is \((0, 0, 1)\). Compute:

\[
\iint_S \nabla \times F \, dS
\]

Bonus: Name a type of cheese.