1. Parameterize and give bounds for the portion of the surface $f(x,y) = 9 - 2x - y^2$ which lies above the rectangle in the xy-plane with vertices at the origin, (1,0), (1,2), and (0,2).

2. Parameterize and give bounds for the rectangle in the plane $z = 3$ with vertices (0,0,3), (8,0,3), (8,5,3), and (0,5,3).

3. Parameterize and give bounds for the cylinder centered on the y-axis with radius 5 and between the planes $y = 2$ and $y = 8$.

4. Let $\mathbf{F}(x,y,z) = \langle 2x, -z, y \rangle$, and let S be the surface from problem 2 with upward orientation. Evaluate $\iint_S \mathbf{F} \cdot d\mathbf{S}$.