1. Let C be the square with sides at $x = 2, x = 5, y = 3, y = 4$, traversed clockwise. Use Green's theorem to set up an iterated integral to find $\oint_C \sin x\, dx + \cos x\, dy$. *Do not integrate.*

2. Identify the sign of the flux of $\underline{F} = z\underline{i}$ through the surface S, where S is the piece of the plane $x = 3$ with $0 \leq y \leq 3, -4 \leq z \leq 0$ and S is oriented with its normal vector pointing away from the yz-plane. Provide brief justification.