Stokes' Theorem

Question

The figure shows a surface S bounded by a circle of radius 1 in the plane $z = 1$. If $\vec{F} = -y\vec{i} + x\vec{j}$ on $\mathbb{R}^3$ and S is oriented away from the origin, compute

$$\iint_S \text{curl}(\vec{F}) \cdot d\vec{S}.$$

A. -2π

B. 0

C. 2π

D. 1

E. There is not enough information.