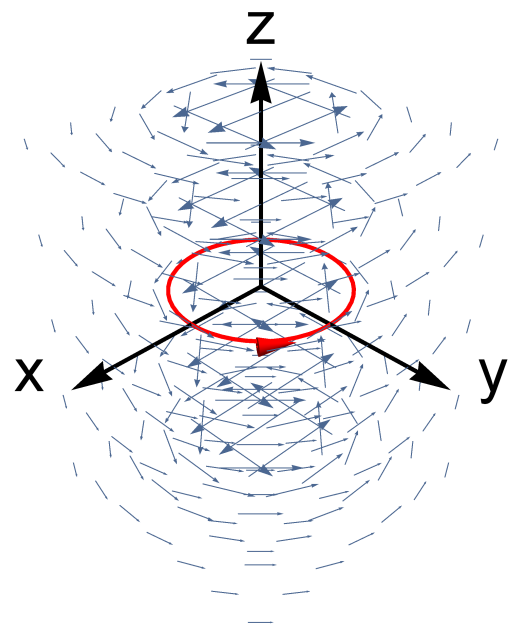
Stokes' Theorem

Question

The vector field $\vec{F} = \dfrac{-y\vec{i} + x\vec{j}}{(x^2 + y^2)}$ has $\text{curl}(\vec{F}) = 0$ everywhere that $\vec{F}$ is defined and C is the oriented circle in the plane $z = 0$ shown.

$$\text{True or False: } \int_C \vec{F} \cdot d\vec{r} = 0 \ ?$$



A. True, and I am confident
B. True, but I am not confident.
C. False, but I am not confident.
D. False, and I am confident.