

Stokes' Theorem



Question

The vector field $\vec{F} = \frac{-y\vec{i} + x\vec{j}}{(x^2 + y^2)}$ has $\text{curl}(\vec{F}) = 0$ everywhere that \vec{F} is defined. Rank the integrals $I_j = \int_{C_j} \vec{F} \cdot d\vec{r}$, where the curves C_j are shown.

- A. $I_3 < I_2 < I_1$
- B. $I_2 < I_1 = I_3$
- C. $I_1 = I_2 = I_3$
- D. $I_1 < I_2 < I_3$

