

Problems: Surface Independence

Suppose that $\mathbf{F} = \nabla \times \mathbf{G}$, where the components of \mathbf{G} have continuous second partial derivatives. Suppose also that S is a closed, positively-oriented surface divided into two parts by a closed curve C . Apply Stokes' theorem to show that $\iint_S \mathbf{F} \cdot \mathbf{n} \, dS = 0$.

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