

Stokes' Theorem on Manifolds- HW Problems

1. Use Stokes' theorem to evaluate $\int_{\gamma} \omega$ where γ is the unit circle in \mathbb{R}^2 , $x^2 + y^2 = 1$, and $\omega = (3x^2y + y^3)dx + x^2ydy$.
2. Use Stokes' theorem to evaluate $\int_{S^2} \omega$ where S^2 is the unit sphere in \mathbb{R}^3 , and $\omega = dx \wedge dy + dz \wedge dx$.