

Math 3298 Worksheet 39: Stokes' Theorem

$$\int \int_S (\nabla \times \vec{F}) \cdot \vec{n} \, dS = \oint_{\partial S} \vec{F} \cdot d\vec{r}$$

Group members (2 to 4): _____

- (1) Compute the flux of the curl of the vector field

$$\vec{F} = (xyz - xy - yz, -x^2z + y^2z + x^2 + xz, z)$$

through the surface $z = x^2 + y^2$, $z \leq 1$, with upward pointing normal, using Stokes' theorem (you can either compute the line integral or choose a different surface with the same boundary).