MATH 249

Today

1. 16.8: Stokes' Theorem (Understand the statement and application of Stokes' Theorem)

2. WeBWorK

16.8: Stokes' Theorem

1. Let S be an oriented piecewise-smooth surface bounded by a simple closed piece-wise smooth boundary curve C with positive orientation. Let $\vec{F}$ be a vector field whose components have continuous partial derivatives on an open region in $\mathbb{R}^3$ containing S. Then

$$\int_C \vec{F} \cdot d\vec{r} = \iint_S \text{curl}\vec{F} \cdot d\vec{S}.$$

2. Flux integrals of a curl are independent of surface!

3. Examples p. 1097: #4, 5, 9, 10, 13, 14

4. WeBWorK: #7 (?)

Next Time

1. Watch 16.9 [$\sim$18 minutes]