

General Stuff

- Office Hours

T: 12:30 - 1:30, Th: 10 - 11

- Final Exam May 6th from 12:00pm - 3:00pm

- Quiz 6 Today 4/22

- Topics include just 7.6?

1 problem

15 minutes to take quiz

5 minutes to upload to gradescope

11:15 - 11:45 questions before quiz

11:45 - 12:00 quiz

12:00 - 12:05 uploading

- Lab 12 after the quiz at 12:20!

- Unofficial Announcement (?): Lab 12 is the last lab, and we will only count your best 9 labs

1. **Double angle formula review:** Let $F = (0, 0, x^2)$. Calculate the flux integral of F through the surface given by the sphere of radius 2 such that $x, y, z \leq 0$. with outward facing normal

2. Let S be the surface given by the parametrization

$$\Phi(r, \theta) = (r \cos(\theta), r \sin(\theta), r^2)$$

from $r = 0$ to $r = 1$, and $\theta = 0$ to $\theta = 2\pi$. Compute the line integral around the counter-clockwise boundary ∂S of the vector field $F(x, y, z) = (x^2 - y, z^2 - x, x + y)$ using Stoke's Theorem.

3. Let D be the disc of radius 3 at a height of 2. Let n be the downward facing normal. Compute the flux integral of $G = (x + y, x - y, z)$.