

General Stuff

- Office Hours

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

Office hours after class today

- Quiz 4 on 3/11

- Topics include probably 5.5 and chapter 4 material. Probably 7.1 as well.

1 problems

15 minutes to take quiz

5 minutes to upload to gradescope

11:15 - 11:40 questions before quiz

11:40 - 12:00 quiz

12:00 - 12:05 uploading

- Lab after quiz Thursday from 12:20 - 1:10

1. Set up the triple integral (!)

$$\iiint_{\Omega} 2z \, dV$$

where Ω is the region bounded by $x = 2 - y^2 - z^2$ and $x = z$.

2. Find the flow lines of the vector field $F(x, y) = (-y, x)$.

3. Let $F(x, y, z) = (xz, e^y, x + y + z)$. (a) Which of the following are well-defined, $\nabla \cdot (\nabla \times F)$ or $\nabla \times \nabla F$. (b) Find $\nabla \times F$ and $\nabla \cdot F$.

4. Suppose a wire can be parametrized as the intersection of the plane $z = y+2$ and $x^2+y^2 = 4$. Suppose the mass density function is given by $m(x, y, z) = z(x^2 + y^2 + 1)$. Find the total mass of the wire.