Homework 11

Due on April 22 in class.

Online notes

www.math.purdue.edu/~zhan1966/teaching/362/diffforms.pdf

If the orientation is not specified in any problem, then simply use outward normal vectors for the surface.

1. Prolem 5 in Exercise Set 3 on Page 27 in the notes.
2. Prolem 6 in Exercise Set 3 on Page 28 in the notes.
3. Prolem 5 in Exercise Set 4 on Page 36 in the notes.
4. Prolem 5 in Exercise Set 5(a) on Page 42 in the notes.
5. Compute $\iint_S dx \wedge dy + 2x \, dy \wedge dz$ where S is the elliposoid $x^2 + y^2 + \frac{1}{4}z^2 = 1$ with outward orientation. Hint: use Gauss Theorem to convert it to a triple integral then use polar coordiates for x, y to compute the triple integral.