

MATH 282 SPRING 2022
HOMEWORK 6
DUE MAY 11, 2022.
INSTRUCTOR: ROBERT LIPSHITZ

Required problems (quiz problems drawn from these):

- Section 16.3: 3, 7, 17, 21, 28, 31–34, 35
- Section 16.4: 2, 7, 13, 19.

Suggested challenge problems (conceptually interesting problems in the text to think about, but which will not be on a quiz):

- Section 16.4: 21, 22, 23. (“Centroid” means “center of mass if the density is constant.”)

Practice matrix:

If you got help with these...	try these on your own for more practice.
16.3.3, 7	16.3.4–10
16.3.17	16.3.12–18
16.3.21	16.3.22
16.3.28	Try a similar problem with the vector field 16.3.17
16.3.31–35	Chat with me
16.4.2, 7	16.4.1–10
16.4.13	16.4.11, 12, 14
16.4.19	Try finding the area of a circle this way.

Comments on some of these problems:

- 16.3.3, 7: Note that there are two kinds of problems in this group: ones where $\vec{F}$ is not conservative, and ones where it is. (For most problems in this group, $\vec{F}$ is conservative.)
- Section 16.4: I didn’t give a lot of “apply Green’s theorem to compute” problems, because they’re a little tedious and you have more in the webworks homework, but do as many as you need to get comfortable with this.
- 16.4.19: Seems to be the only problem in the book using Green’s theorem to find an area. Problems 21–24 are a bit similar, though.

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