

MATH 281 FALL 2023
HOMEWORK 2
“DUE” OCTOBER 9, 2023.
INSTRUCTOR: ROBERT LIPSHITZ

Recall: this homework will not be graded, but I will select approximately two problems from it for the quiz on the Wednesday after it's due. (I will change the numbers in the problems slightly, so there's no point trying to memorize the answers.)

Required problems:

(Quiz problems drawn from these.)

- Section 12.4: 7, 9, 13, 14, 17, 19, 23, 31, 33.
- Section 12.5: 5, 9, 13, 23, 27, 35, 41, 45, 51, 57(a), 61,

If you got help with one of these problems, solve a similar one on your own!

Suggested challenge problems:

(Conceptually interesting problems in the text to think about. Will not be on a quiz.)

- Section 12.4: 45, 46, 51
- Section 12.5: 75.

Comments on some of these problems:

- 12.4.23: Don't be intimidated by these “prove” problems: it wants you to write, say, $\mathbf{a} = \langle a_1, a_2, a_3 \rangle$ and similarly for $\mathbf{b}$, expand the two sides, and see they're equal.
- 12.5.23, 27, 35, 61: There are a huge number of variations on this kind of problem, so you may want to practice some more (try the problems around 35 in the book.) The game is always to use the geometry to find a point on the plane and a vector normal to the plane. Puzzling through these kinds of problems seems to help with getting used to the geometry, and this kind of reasoning will come up some when we talk about tangent planes.

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