

**MATH 281 FALL 2023**  
**HOMEWORK 3**  
**“DUE” OCTOBER 16, 2023.**

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**Required problems:**

(Quiz problems drawn from these.)

- Section 12.6: 3, 9, 11, 17, 23–30, 31, 37, 49
- Section 13.1: 3, 9, 13, 21, 25–29, 35, 39, 41–48, 53, 58
- Section 13.2: 5, 11, 19, 27, 31, 37, 43, 47, 49.
- Section 13.4: 5, 9.

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 12.6: 51, 53.
- Section 13.1: 60, 62.
- Section 13.2: 55, 57.
- Section 13.4: 44.

**Comments on some of these problems:**

- 12.6.53: There is a pretty picture behind this, which you have probably seen somewhere.
- 12.6.23–30 and 13.1.25–29: I like matching problems like this. One way to practice these is to make up a not-very-complicated formula for a parametric curve (say), get a computer to graph it, and then match up some features of the graph with things you could have read from the formula.
- 13.2.55, 57: These and similar formulas come up from time to time, especially in physics-related contexts. I wouldn't memorize them, but it's useful to know they're out there.

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