

Math 4230, Fall 2012
Homework #1
Due Friday, September 7, 2012

From J. Oprea, *Differential Geometry and Its Applications*:

Exercises 1.1.14, 1.1.16, 1.1.17, 1.1.20, 1.1.22, 1.1.25, 1.1.26, 1.1.27.

(Note that the exercises are embedded in the text; you will need to read the text in order to do the exercises!)

In addition, get on one of the computers in MATH 217 and start up Maple: from the bottom left corner of the screen, select Start → All programs → Maple 16 → Maple 16. You'll be asked whether you want to open a new "Worksheet" or a new "Document." (Document is the newer, fancier mode with lots of nifty templates and such, while Worksheet is mostly for old dogs like me who don't want to learn new tricks. A comparison of the two can be found under Help → Quick Reference.) Click on "Help," and scroll down to "Take a tour of Maple." This brings up a list of several topics, each of which links to a Maple worksheet with examples. You might want to start with the "Ten Minute Tour." Other places you might want to explore are:

- Help → Manuals, Dictionary and More → Applications and Examples
- Tools → Assistants (lots of cool stuff here)
- Tools → Tutors

Spend some time exploring and learning about how Maple works, particularly the graphics and linear algebra sections. Try some examples of your own, if you like.

What do you like about it? What do you not like about it? Can you think of any interesting applications for it? Do you have any questions about how to use it? (Yes, this is an essay question!)