

## Problem Set 6

(Out Mon 10/10/2011, Due Tue 10/18/2011)

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**Instructions**

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Any problem given by a number (and page reference) is taken from the book Brian Bradie, *A Friendly Introduction to Numerical Analysis*, Pearson Prentice Hall, 2006.

- Problems marked with **(T)** are theory problems. Their solutions are to be submitted on paper.
- Problems marked with **(P)** are practical problems, and require the use of the computer. Their solutions are to be submitted on paper, and usually require two parts: (a) a description of the underlying theory; and (b) code segments, printouts of program outputs, plots, and whatever it required to convince the grader that you have understood the theory and addressed all practical challenges appropriately.

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**Section 3.1** (pages 157–160)

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In order to do the **(P)** problems, you need to first write a Matlab code that performs Gaussian elimination “by hand”, as given in 3.1.

**(T)** 10.

**(P)** 12. (google for `matlab single precision`)

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**Section 3.2** (pages 168–170)

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Now you need to extend your Gaussian elimination Matlab code to allow for different pivoting strategies, as given in 3.2.

**(T)** 1. (just name the indices of the entry)

**(T)** 2.

**(P)** 12. (use your Matlab codes, including a nicely formatted output of the matrices)

**(P)** 18.

**(P)** 20.