Math 308, Spring 1999

Assignment 2.

Given Friday, April 9; due Friday, April 16.

Objectives: (1) To practice proving results about matrix operations and nonsingularity, (2) To learn more about how MATLAB solves linear systems.

Exercises from the text:

p. 59–60, #58, 66.

p. 69–70, #26, 32, 46.

p. 78–79, #30, 46, 49, 56, 57.

MATLAB exercise:

Modify the code back_solve.m to check whether diagonal elements are zero, and, if they are, to display informative messages about the redundancy or inconsistency of the equations. Also modify the code gauss_el.m to check for zero pivots and to skip the elimination in columns that consist entirely of zeros on and below the diagonal.

Turn in: A listing of your modified codes, with the changes highlighted. A demonstration of your modified codes applied to a singular matrix, first with a right-hand side vector for which the linear system is consistent, and then with one for which it is inconsistent.