Math 223, Section 201
Review for Final Exam (April 9, 2002)

Note: To a certain extent, the final exam will have an emphasis on the material learned after the midterm. However, *you will be accountable for all of the material learned during the entire semester on the final exam.* Please refer to the Review for Midterm (which you can obtain from the course web page) for the sections covered before the midterm, including suggested review problems. The course web page also contains logistical information on the format of the final exam, rules and restrictions, and so on.

Sections covered since the midterm:

- **2.7** The Leontief Input-Output Model
- **3.1** Introduction to Determinants
- **3.2** Properties of Determinants
- **4.1** Vector Spaces and Subspaces
- **4.2** Null Spaces, Column Spaces, and Linear Transformations
- **4.3** Linearly Independent Sets; Bases
- **4.4** Coordinate Systems
- **4.5** The Dimension of a Vector Space
- **4.6** Rank
- **5.1** Eigenvectors and Eigenvalues
- **5.2** The Characteristic Equation
- **5.3** Diagonalization
- **6.1** Inner Product, Length, and Orthogonality
- **6.2** Orthogonal Sets
- **7.1** Diagonalization of Symmetric Matrices

Remember that you are not responsible for topics mentioned neither in lectures nor on the homework (especially involving numerical issues associated with computer linear algebra calculations). You also do not have to memorize theorem numbers, as long as you clearly state whatever facts you invoke in your solutions. Also, there will not be any questions about Cramer's Rule or area/volume (Section 3.3) or quadratic forms (Section 7.2) on the final exam.

I suggest that you make sure you can solve the warm-up questions on Homeworks 5–9; check your homework answers against the solutions and understand whatever mistakes you might have made; and try to work the practice problems in the sections before looking at the solutions.