Math 236 **Problem Set 11** **Spring, 2001**

Due: Friday, May 11

Contrary to any "Do not use technology" instructions in the text, you *may*—and probably should—use MATHEMATICA to do row reductions, solve linear systems, find bases of null spaces, etc.

As usual, include printouts of all MATHEMATICA work whose results you used!

1. Do page 337, Exercise 15. (Note: the question is to determine whether the matrix is diagonalizable and, if so, to find a diagonal form D and the corresponding diagonalizing matrix S.)

2. Let $A = \begin{bmatrix} 4 & -2 \\ 1 & 1 \end{bmatrix}$. Use diagonalization in order to find a closed-form formula for A^t for $t = 0, 1, 2, 3, \ldots$.

3. Do page 143, Exercise 20.

4. Do page 143, Exercise 14.

5. Do page 143, Exercise 18.