Math 640A **Fall 2002**
Homework 6, due Friday October 25.

1. (10 points) Section 4.3 problem 1 part a.

2. (30 points) Section 4.3 computer problem 1. Put in lots of comments.

3. (20 points) Do this problem as a Good Problem, paying attention to the *Layout*, *Flow*, *Symbols*, and *Logic* handouts.

   Section 4.4 problems 1 and 2 (combine them).

4. (20 points) Section 4.4 problems 33 and 40

5. (20 points) In Section 4.5, a method is given to compute the inverse of $(I - A)$ using the Neumann series formula

$$(I - A)^{-1} = \sum_{k=0}^{\infty} A^k.$$

   We could instead compute it using the product formula

$$(I - A)^{-1} = \prod_{k=0}^{\infty} (I + A^{2^k}).$$

   Verify this second formula, and determine whether it is more or less efficient than the first. Would you recommend it?