Smith   Math 290   Fall 2010

Proof E and D-1

- First due date **Monday, Nov 29**.

- Turn in your work on a separate sheet of paper with this page stapled in front.

- Do not include scratch work in your submission.

- There is to be **no collaboration** on any aspect of developing and presenting your proof. Your only resources are: you, the course textbook, me, and pertinent discussions that occur **during class.**

- Follow the Writing Guidelines of the Grading Rubric in the course information sheet.

- Retry: Only use material from the relevant section of the text or earlier.

- Retry: Start over using a new sheet of paper.

- Retry: Restaple with new attempts first and this page on top.

"A life spent making mistakes is not only more honorable, but more useful than a life spent doing nothing."
– George Bernard Shaw

E and D-1 (You may use material up through Section SD)
Suppose that A is a square matrix that is equal to its inverse, $A = A^{-1}$.

1. Prove that the only possible eigenvalues of A are $\lambda = 1$ and $\lambda = -1$.

2. Give an example of a 3×3 non-diagonal matrix that is equal to its inverse and has both 1 and -1 as eigenvalues.