1. Do 28.2 on page 218 of Trefethen and Bau.
2. Do 29.1 parts (a), (b), and (c) on pages 223 and 224 of Trefethen and Bau. This is a Matlab exercise: turn in all code, as well as the printouts and plots of your runs on "hilb(4)".
3. Do 30.3 on page 233 of Trefethen and Bau.
4. Do 30.4 on page 233 of Trefethen and Bau.
5. Do 30.6 on page 233 of Trefethen and Bau.
6. Do 31.4 on page 240 of Trefethen and Bau. This is a Matlab exercise: turn in all code, as well as the printouts of your runs on the given upper-triangular matrix A. Look up and use the "triu" and "ones" commands to save some time forming A. You can use the "svd" and "eig" commands to compute the desired singular value and eigenvalue, respectively.
7. Now modify your code for 31.4 of Trefethen and Bau in order to produce estimates of the **second smallest** singular value of A in the same two ways. Run your new code for $1 \leq m \leq 30$, plot the new results, and discuss how the two methods compare in this case (for this next larger singular value). This is a Matlab exercise: turn in all code, runs, and plots.
8. Do 32.2 parts (a) and (b) on page 249 of Trefethen and Bau.
9. Do 33.1 on page 255 of Trefethen and Bau.
10. Do 35.5 on page 255 of Trefethen and Bau.