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Math221: Matrix Computations

Homework #4, Due Sept. 27, 2007

- Problems 2.7, 2.16, 2.21.
- - Download `hager.m` and `counterexample_hager.m` from the class website. Run these codes for different values of n and `scl`. Compare the output of `hager.m` with the true matrix 1-norm for values of `scl` ranging from 10^5 to 10^{50} .
 - Perform an analysis in exact arithmetic to show that Hager's condition estimator fails to correctly estimate the matrix 1-norm on the counter example in `counterexample_hager.m` for large values of `scl`.
 - Perform an analysis in floating point arithmetic to explain why Hager's condition estimator might estimate the matrix 1-norm correctly for really huge values of `scl`.