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Math221: Matrix Computations
Homework #5, Due Oct. 4, 2007

- Problems 3.1, 3.3, 3.4, 3.5, 3.9, 3.14
- Write a matlab code to generate random matrices of the form
  `A = randn(m,n) * diag(scl.^(1:n))*randn(n,n),`
  where `scl` is a scalar between 0 and 1. Choose scl, m, and n so that the above matrix ranges from well-conditioned to very ill-conditioned. Download the classical Gram-Schmidt amd modified Gram-Schmidt programs from the class website and run them on these matrices. Compare the redidual $\|A - Q \cdot R\|_2 / \|A\|_2$ as well as $\|Q^T \cdot Q - I\|_2$ between these methods.