

Math 128b – Spring 2014 – Homework set 1

Due Tuesday 1/28 in class before the lecture starts.

1. p.79, computer problems 2.1, 1, 2.
2. p.85, computer problems 2.2: 1, 2.
3. p.94, computer problems 2.3: 1, 5.
4. p.84, exercises 2.2: 2(a)
5. p.94/95, exercises 2.3: 8, 9(a), 10(a), 12, 13, 14.
6. Is the operation count of the code on p.75 $2/3n^3 + 1/2n^2 - 7/6n$? Explain.
7. Show with an example that not all invertible matrices have an LU factorization that can be found via “naive” Gaussian elimination.
8. What can be done if $\text{cond}(A)$ is large, but you must solve $Ax = b$. Hint: what happens when you multiply from the left with A^{-1} ? What happens when you left multiply with other matrices?