

Homework 3

due Thursday, September 21

A. Read: Sections 2.2, 4.1, 4.2 (except Cholesky factorization)

B. Hand in:

- page 54, exercise 36
- page 60, exercise 9 (a, b, d, i)
- Consider the matrix:

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 6 \\ -1 & -4 & -1 \end{bmatrix}.$$

Use Gaussian elimination to produce an LU factorization of A , and write L as a product of elementary matrices. Verify your answers using Matlab's `lu` function (type `help lu` to learn about it).

- page 158, exercises 2 (do it for 2×2 matrices at least), 7, 12, 13, 17

C. Practice:

- page 158, exercises 1, 5