Norwegian University of Science
and Technology
Department of Mathematical
Sciences

TMA4215 Numerical mathematics Autumn 2013

Exercise set 3

1 Set 2. Problem 2 and 3.

2 Given the linear system of equations

$$\begin{aligned} x_1 - 5x_2 + x_3 &= 7, \\ 10x_1 + 20x_3 &= 6, \\ 5x_1 - x_3 &= 4. \end{aligned}$$

Solve the equations by

a) Naiv Gauss-elimination.
b) Gauss-elimination with partial pivoting.

Write down the LU factorization in both cases.

No solution will be given: You can easily check your answers yourself. To see if you have done the pivoting right, check your result with MATLAB: `[L,U,P] = lu(A)`.