

# Aero 320: Numerical Methods

## Lab Assignment 11

Fall 2013

### Problem 1

#### LU decomposition

Consider the matrix  $A = \begin{bmatrix} 5 & -1 & 2 \\ 10 & 3 & 7 \\ 15 & 17 & 19 \end{bmatrix}$ .

- (a) Compute the LU decomposition of  $A$  by hand.
- (b) Compute the LU decomposition of  $A$  by writing a C++ code.
- (c) In your code, use the LU decomposition to compute  $\det(A)$ .