Hilbert:

IMPORTANT: the use of an inverse matrix function should be avoided, your program should use backward or forward substitution; use of an inverse matrix defeats the purpose of these methods (Why?).

(e) Sumarize your findings by plotting the errors obtained as a function of n, for each

of the methods. The plots can be done using your own code, Excel or any graphing

program. The plots should be included in the written component of this part of the

project.

(f) Answer the following questions in the associated written component for this part of

the project:

(i) Why is it justified to use the LU or QR-factorizations as opposed of calculating

an inverse matrix?

(ii) What is the benefit of using LU or QR-factorizations in this way? (Your answer

should consider the benefit in terms of conditioning error.)