Quiz #4

Student Name: Student ID:

Given the system of equations

$$8x_1 + 2x_2 - 2x_3 = -2$$
$$10x_1 + 2x_2 + 4x_3 = 4$$
$$12x_1 + 2x_2 + 2x_3 = 6$$

(a) Use LU decomposition to determine the matrix inverse for the above system.

(b) Use the inverse to determine the solution

(c) Use the Gauss-Seidel method to solve the above system until the percent relative error falls below $\varepsilon_s = 5\%$.

Theoretical Models for Computing