Quiz (VI)

Finished by 18:30 on 6/1

Create a matlab script and change the filename to F7xxxxxxx_quiz6.m. Link all the programs to solve following problems to this script. Make sure once type the filename' F7xxxxxxx_quiz6', the results of the following problems will pop-up automatically in order. Remember not to type any 'clear all ', 'close all' command in any of the codes.

1. [F7xxxxxxx_quiz6_prob1.m] Use Gauss elimination to solve the following equation:

$$\pi x_1 - e x_2 + \sqrt{2}x_3 - \sqrt{3}x_4 = \sqrt{11}$$
$$\pi^2 x_1 + e x_2 - e^2 x_3 + \frac{3}{7}x_4 = 0$$
$$\sqrt{5}x_1 - \sqrt{6}x_2 + x_3 - \sqrt{2}x_4 = \pi$$
$$\pi^3 x_1 + e^2 x_2 - \sqrt{7}x_3 + \frac{1}{9}x_4 = \sqrt{2}$$

2. [F7xxxxxxx_quiz6_prob2.m] Use iterative method (Jacobi, or Gauss-Seidel) to solve the following equation:

$$4x_1 + x_2 - x_3 + x_4 = -2$$
$$x_1 + 4x_2 - x_3 - x_4 = -1$$
$$-x_1 - x_2 + 5x_3 + x_4 = 0$$
$$x_1 - x_2 + x_3 + 3x_4 = 1$$

   (a) Which method did you use to solve the equation?
   (b) What matrix (write down each element of the matrix) did you use to perform the iteration?
   (c) What are the initialx_1 to x_4?
   (d) How many iterations does it require to reach the printed solution and what are the precisions of each element?

3. {Bonus} Find the total current and the total resistance of the circuit.