**ECE 530 Problem Set #4 Fall 2015**

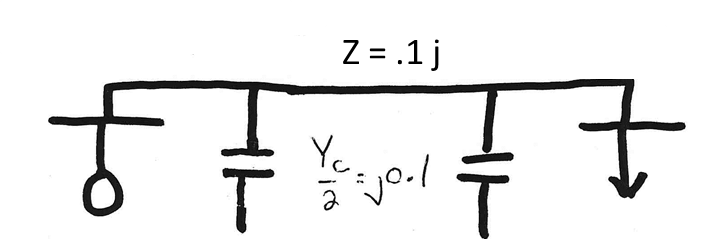
**Due 10/19/15**

1. Apply the Gauss-Seidel iteration to the system

Use and explain what happens.

2. Solve problem1 using the conjugate gradient method. What would happen now?

3. For the two-bus case in the Problem 3 of Problem Set # 1, place a transformer with p.u. reactance and the tap between Bus 2 and the load (introduce a new bus 3). Find the new admittance matrix and the corresponding Jacobian matrix.



Bus 2

Bus 1

4. For five-bus case (Bus5\_GSO) in Problem Set # 2, solve it again using the dc power flow model. Show all your work and compare the solution with the one you obtained using the N-R power flow method.