ECE 2201 – CIRCUIT ANALYSIS I

HOMEWORK #6

1. a) Use the node-voltage method to write a complete set of independent equations that could be used to solve this circuit. Do not attempt to simplify the circuit.

Next slide

b) Find *iX*. (PEQWS Module 3 Problem 1)



2. a) Use the node-voltage method to write a complete set of independent equations that could be used to solve this circuit. Do not attempt to simplify the circuit.

b) Find *vX*. (PEQWS Module 3 Problem 3)



3. a) Use the node-voltage method to write a complete set of independent equations that could be used to solve this circuit. Do not attempt to simplify the circuit.

b) Find *vX*. (PEQWS Module 3 Problem 5)



4. a) Use the node-voltage method to write a complete set of independent equations that could be used to solve this circuit. Do not attempt to simplify the circuit.

b) Find *iX*. (PEQWS Module 3 Problem 7)



5. a) Find the power delivered by the current source in the circuit below.

b) Find *iX*. (PEQWS Module 3 Problem 9)



6. Use the Node-Voltage Method to write a complete set of equations that could be used to solve the circuit below. Define all variables. Do not attempt to simplify the circuit. Do not attempt to solve the equations.



7. Use the node-voltage method to write a complete set of equations that could be used to solve this circuit. Do not simplify the circuit. Do not attempt to solve or simplify your equations. Define all variables.



8. For the given circuit, use the node-voltage method to write a complete set of independent equations that could be used to solve this circuit. Do not simplify the circuit. Do not attempt to solve or simplify your equations. Define all variables.



## Numerical Solutions

1. *iX* = -0.3787[A]

2. *vX* = 430.06869[V]

3. *vX* = 0.38679[V]

4. *iX* = -0.40467[A]

5. a)  b) *iX* = 485[A]

6. through 8. Solutions omitted.