ECE 2201 – CIRCUIT ANALYSIS I

HOMEWORK #8

1. For the circuit shown, calculate the Thévenin equivalent resistance with respect to terminals a and b.

Next slide



PEQWS Module 4 Problem 1

2. For the circuit shown, find the Thévenin equivalent circuit with respect to terminals a and b. Draw the Thévenin equivalent circuit. On the drawing, clearly show the terminals a and b, the value of the circuit elements, and the reference voltage for the Thévenin voltage source.



PEQWS Module 4 Problem 2

3. a) Find the Norton equivalent as seen by the 22[k] resistor.

1. Attach the Norton equivalent that you found, to the 22[k] resistor. Use this circuit to solve for *iQ*.



PEQWS Module 4 Problem 3

4. The device in Figure 1 can be modeled with a voltage source in series with a resistance. The current and voltage for the device are related as shown in the plot in Figure 2. The device has been connected in a circuit shown in Figure 3. Find *iX*. PEQWS Module 4 Problem 4



5. For the circuit shown, find the Thévenin equivalent circuit as seen with respect to terminals a and b.

Draw the equivalent circuit that you found.

On this equivalent circuit you have drawn, show the values for the circuit components, and label terminals a and b.



6. For the circuit shown, use source transformations to obtain an equivalent circuit as seen by the 4.7[k] resistor.

Draw the equivalent circuit, showing terminals a and b on your circuit, showing the 4.7[k] resistor, and showing the numerical values of the circuit components. Find the voltage *vX* from your equivalent circuit.



Selected Numerical Solutions:

1-4. Solutions omitted here.

5. *vTH* = -2000[V] (sign depends on polarity of source with respect to terminals), *RTH* = -200[]

6. Solution omitted here.