Chapter 4 Homework:

1. Use superposition to determine the voltage V in the circuit below. The current U is an arbitrary value.



1. For the circuit of problem 1, determine an input-output relationship between the current U and the voltage V. Plot the relationship between U and V, using U as the independent variable (e..g. U is on the horizontal axis.)
2. For the circuit of problem 1, replace everything but the current source with its Thevenin equivalent circuit. Replace the current source in your Thevenin circuit and determine the input-output relationship between the current U and the voltage V. Does your result agree with the input-output relation you obtained in problem 2?
3. For the circuit below
4. Replace everything except the resistor R in the circuit below with its Thevenin equivalent circuit.
5. Using your result from part (a), determine the current I if R = 3Ω.
6. Determine the value of R that draws maximum power from the circuit.



1. For the circuit below
2. Replace everything except the resistor R in the circuit below with its Thevenin equivalent circuit.
3. Determine the value of R that draws maximum power from the circuit.



1. Use superposition to determine the voltage V in the circuit below. The voltage U is an arbitrary value.



1. For the circuit of problem 1, determine an input-output relationship between the voltage U and the voltage V. Plot the relationship between U and V, using U as the independent variable (e..g. U is on the horizontal axis.)
2. Replace everything in the circuit below, *except* the 4Ω resistor, with its Thevenin equivalent circuit. Use the result to determine *vab*.



1. Replace everything to the left of the terminals a-b with its Thevenin equivalent circuit. Determine the value of R that will draw the maximum power from the circuit.

