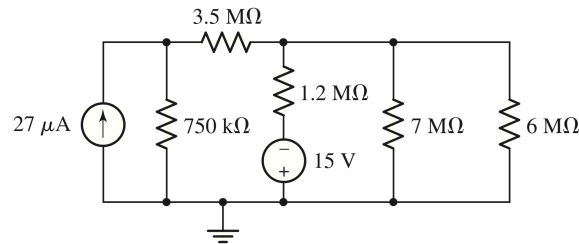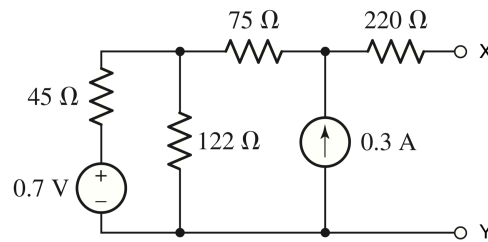EEE 31 second semester AY2017-2018 : Homework 03
Due: 16 April 2018

1. Using repeated source transformations, determine the Thevenin equivalent of the circuit below as seen by the 6MΩ resistor. Use this to calculate the power delivered to the 6MΩ resistor.
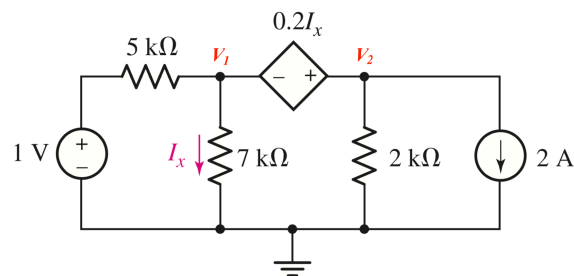

2. Determine the Thevenin and Norton Equivalent of the circuit below with respect to terminals X and Y.

3. Determine the Thevenin equivalent of the circuit below with respect to the terminals shown.
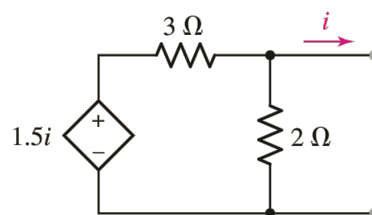
4. Use superposition and the node-voltage method to determine v_1 and v_2.

5. The circuit shown is a small-signal model of a bipolar transistor amplifier circuit. The sinusoidal voltage source is the input to the amplifier.
    a. What value of R_L will result in maximum power being transferred to it?
    b. What is the average power that will be transferred to R_L? (Hint: Use the concept of effective voltage)