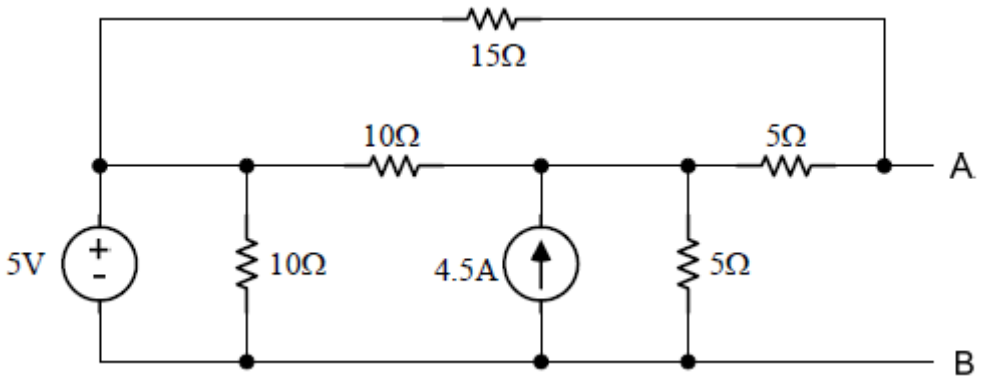
ROSE-HULMAN INSTITUTE OF TECHNOLOGY

ECE203 DC Circuits Spring 2016-2017

Homework Set #14
DUE Tuesday, April 18, 2017

1. Complete the following analysis for the circuit shown below:

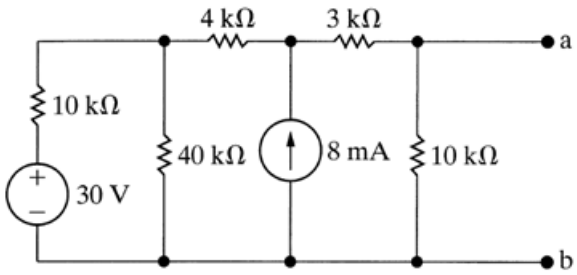


a. Find the Thevenin equivalent circuit looking into terminals A-B using the "open-circuit voltage, short-circuit current" technique.
b. Repeat part A using the "open circuit voltage, equivalent resistance" technique.

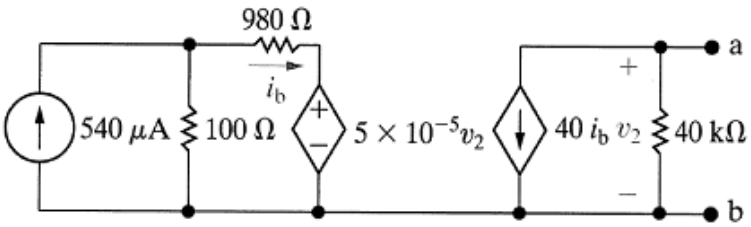
2. A voltmeter with a resistance of 100 kΩ is used to measure the voltage v_{ab} in the circuit in Fig. P4.67.
   a) What is the voltmeter reading?
   b) What is the percentage of error in the voltmeter reading if the percentage of error is defined as [(measured − actual)/actual] × 100?

Do this by finding the Thevenin Equivalent at a – b and attaching the voltmeter to make a voltage divider.

Figure P4.67



3. Determine the Thevenin Equivalent at a – b for the following circuit.



Do this by finding the open-circuit voltage and short-circuit current and use them to get the Thevenin Resistance.