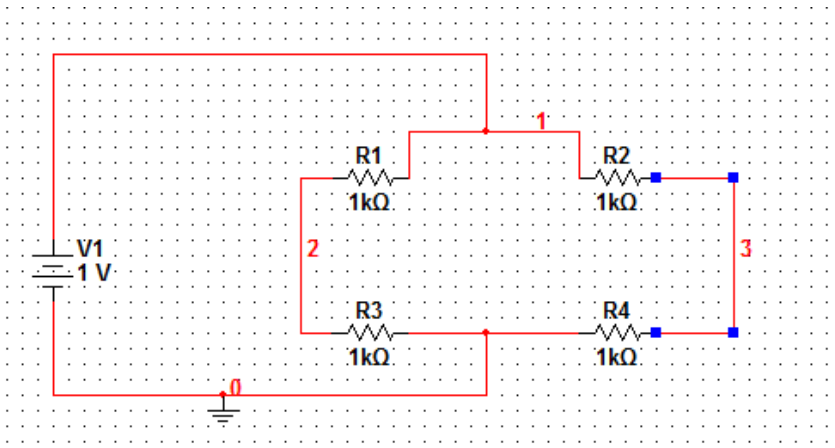
Graphing Voltage Difference vs. Variable Resistance in MultiSim

(No guarantees that the following is the most efficient way to do this. But it works!)

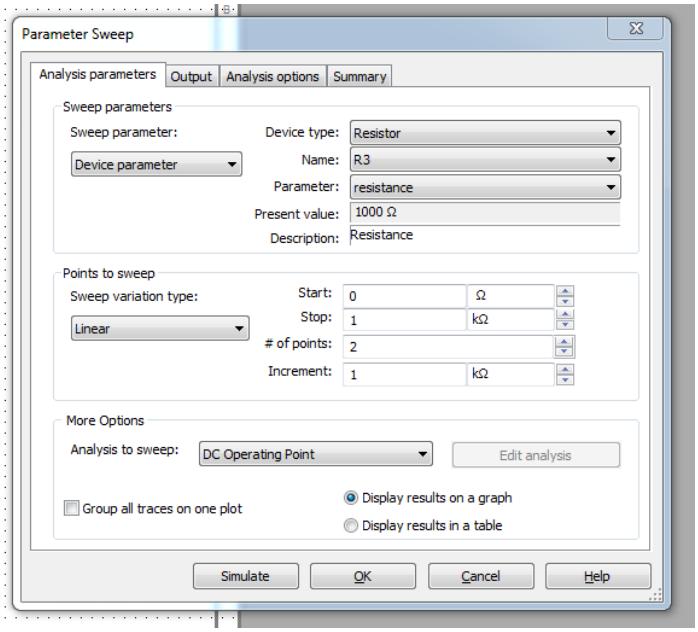
For ex. 2.17 on pre-lab 2, from the book, a simple table with the voltage difference simulated for a few different potentiometer values would have sufficed.

However, if you wanted to cleanly plot the voltage difference as a function of potentiometer resistance, the following steps would allow you to do so.

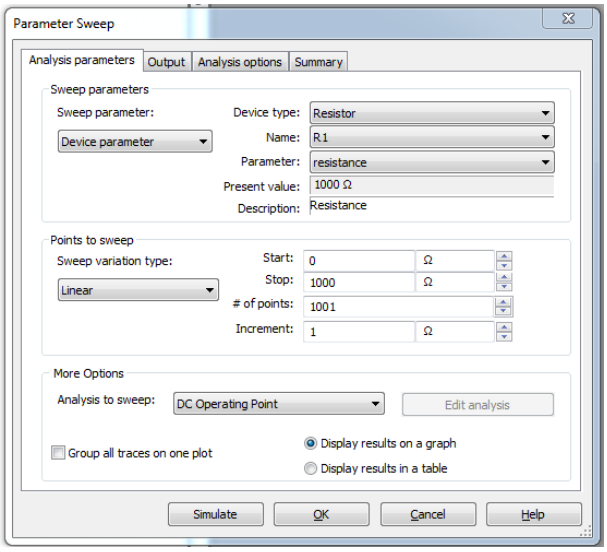
1) Replace the potentiometer with a simple resistor. Your circuit should look something like:



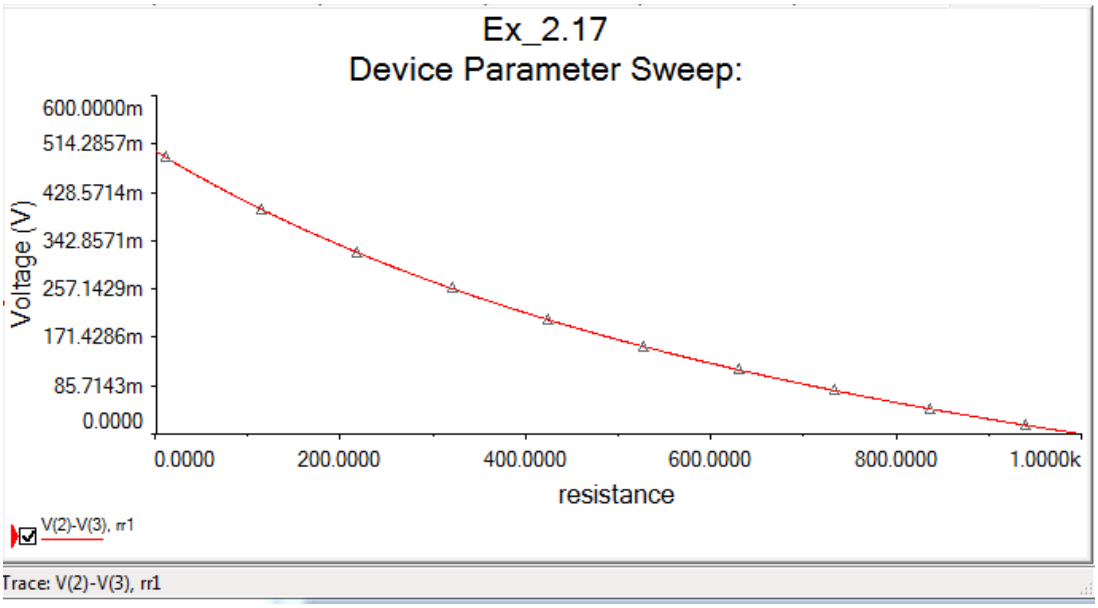
2) Click *Simulate* → *Analyses* → *Parameter Sweep*. This should open a window:



3) In the *Analysis parameters* tab, change "Name" to "R1," so that you can sweep across many values of R1. Set the "Start" to 0 Ω, and the "Stop" to 1000 Ω, so that you will be testing values all the way from 0 to 1000 Ω. Set the # of points to, say, 1001, so that the step size on your graph is 1 Ω. Now the window should look like:



4) Click into the *Output* Tab. Choose the "Add expression" button. In the expression field, type "V(2) – V(3)," assuming the two nodes on your circuit are labeled 2 and 3. Finally, click "Simulate" at the bottom of the window. The computer will take a few seconds to run the simulation for every given parameter value, and will output a plot of voltage against resistance. You should get a plot like:



Note that your black and white colors may be inverted. You can change this by de-selecting the "Black background" button above the plot.