of I (from the DMM) and V_{R_L} (from the DVM). Check your measurements by varying R_L from 1280 Ω to 10 Ω, decreasing the resistance by a factor of one-half each time.

We are interested in the power dissipated by R_L, as a function of R_L; you now have the required data to plot such a function (use your measured values of I and V_{R_L} to calculate the dissipated power, as the nominal values of the decade resistance box are not to be trusted). Enter your values in Graphical Analysis (GA) and plot the function of interest; you will increase the accuracy of your plot if you measure the values of R_L with your DMM instead of using the nominal values from the decade box. From your plot, read off the value of R_L for which the dissipated power is a maximum and compare with R_0 (again measure the value of R_0 instead of trusting the decade box setting of 100 Ω).

To explain your result, some calculus is required. Using symbols, write P_{R_L}, the power dissipated in R_L, as a function of R_L (your other symbols are R_0 and the power supply voltage $\mathcal{E}$, both of which are constant) and then take the derivative of this function with respect to R_L and set that derivative equal to zero; solving for R_L will determine the value of R_L for which P_{R_L} has an extreme value, in this case a maximum. Show this work in your analysis.

To quantify the comparison from your plot, use the curve-fitting capability of GA. You have derived a theoretical equation for P_{R_L} as a function of R_L; fit your plot to this theoretical equation, and compare the resulting constants with your measured values of R_0 and $\mathcal{E}$ (again, measure $\mathcal{E}$ with the DVM instead of trusting the power-supply meter). Report these comparisons in your conclusions.