Name:	Student ID:

Physics 9C Lab Report #5

I. Resistance of the Light Bulb

1. Create a data table that includes time, charge, voltage, stored energy (and for part 7, include one more column). There should be at least 8 rows, and one should be $t = 0$.

2. Plot the data points Q vs. t using the desmos graphing calculator.

3. Create a function $Q(t)$ in desmos that matches the data. Print, scan, or screen-capture what you have in desmos (the data points and your $Q(t)$ function on top of them), and include it with this lab report.

4. Use the details of the graph that you have matched to the data to calculate the resistance of the light bulb.

5. How does the physical process differ when the plate is charged and the separation is increased before discharging it? Give a brief explanation.

6. Recompute the resistance of the light bulb using just the data at $t = 0$ and at the stopping time for this new process.

II. Accounting for Energy

7. Compute the power emitted at the various times in your first run, and include a column in the table produced for part (1) for these values.

8. Plot the points of power vs. time in the desmos calculator, and fit a curve to them. Include this desmos output (data points & curve) with your lab report.
9. Give the result of the integration between the two times you have chosen from your data, and show that it equals the change in the circuit's stored energy.