

name _____

ID# _____

Experiment 1

Mapping E-Fields

Questions

1. If both the positive and the negative probes of the voltmeter were placed on the 20 volt line, what would the meter read? **(2 points)**
2. Calculate the work done in moving a proton from the 40 V line to the 10 V line. How much force is required to do this? **(3 points)**
3. Why does the LED only light up when it is pointed in the direction of the field? (Hint: The LED requires a certain amount of current, the flow of charge, to light up. Charges only move when there is a force acting on them.) **(3 points)**
4. In a severe thunderstorm sitting in your car is safer than being out in the open. Why is this? (Hint: Look up 'Faraday cage'.) **(2 points)**

Staple your completed maps to the answers to the questions.