Homework 14 for September 19 2008
Due 8AM on September 23 2008
Physics 221 with Professor Jeff Terry

1. How much work is done in moving Avogadro's number of electrons from an initial point where the electric potential is 9.00V to a point where the potential is -5.00V? (Assume that the potential is measured from a common reference point.)

2. Calculate the speed of (a) a proton and (b) an electron when accelerated from rest through a potential difference of 120 V.

3. An electron has an initial speed of $3.70*10^{-6}$ m/s which is reduced to $1.40*10^{5}$ m/s when it has traveled 2.00 cm. Calculate the potential difference between its initial and final position.

4. At a certain distance from a point charge, the magnitude of the electric field is 500 V/m and the electric potential is -3.00 kV. What is the distance to the charge and what is the magnitude of the charge?