PHYSICS 2401

Lab Homework – The Electric Field and Potential Between Charged Plates

This homework will be due when you come to lab the week of February 17.

This homework is to be done on this sheet.

Consider the two parallel plates shown below containing equal and opposite charges. The top plate is the negatively charged plate. The potential difference between the plates is 50 V, and they are 1.4 m apart. Point A is a point in space 0.20 m above the bottom plate. Points B and C lie on a line 0.40 m below the top plate.

Draw the electric field lines for this arrangement.

In the space below the figure, answer the following questions. Calculate the potential difference between points A and B. Show your work and explain your reasoning. Compare the strength of the electric field at point A to the strength of the electric field at point C. Use the back or attach a second sheet if necessary.