

Name _____ Instructor name _____

You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.

1. (a) The electric potential due to a point charge is given by $V = kq/r$ where q is the charge, r is the distance from q and $k = 8.99 \times 10^9 \text{ Nm}^2/\text{C}^2$. Show, in detail, that the SI unit of electric potential is a volt. (b) What are the equipotential lines? (c) How are equipotential lines used to obtain the electric field lines? (10 pts)

2. The three point charges are placed at equal distances from each other, as shown in the figure below. Draw the electric field and equipotential lines for the figure. Make a detailed representation. (10 pts)

