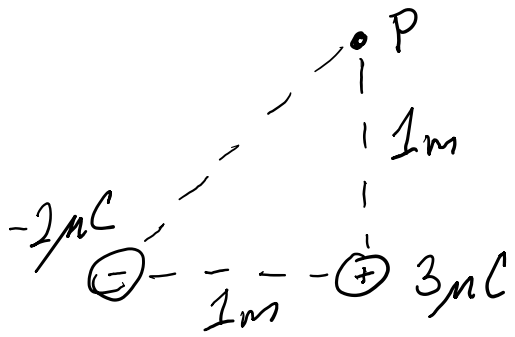
**Practice Quizzam 3**

1. What is the electric potential at point P due to the two charges shown below?

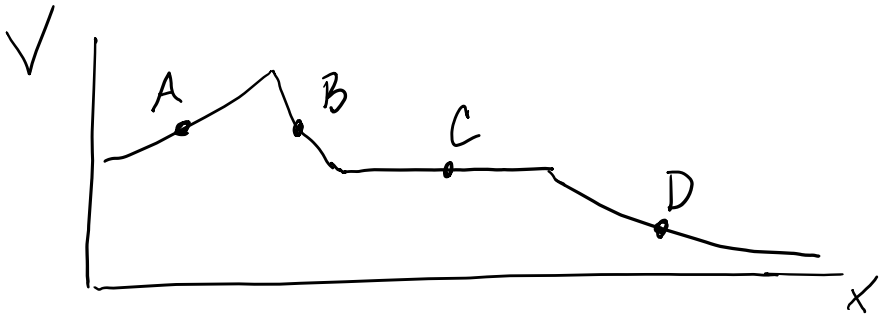



1. A electron is released from rest at the center of a parallel plate capacitor with a plate separation of d = 2 mm and voltage difference of ΔV = 100 V. In which direction does the electron move?
    a. Towards the plate with lower potential.
    b. Towards the plate with higher potential.
    c. In a direction parallel to the two plates.
    d. It remains stationary.

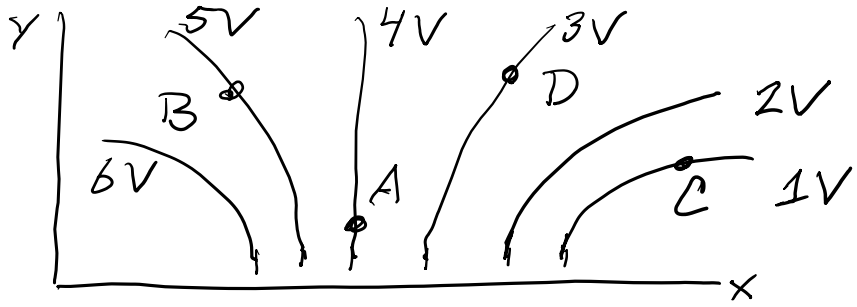
2. Below is a graph of electric potential along the x-axis.
    a. At which point is the magnitude of the electric field largest?

    b. At which point(s) is the electric field pointing in the negative x-direction?

    c. Which point(s) might be inside of a conductor?



3. The below diagram shows a number of equipotential curves. Sketch the electric field at the points A, B, C and D.




4. A parallel plate capacitor with a plate separation of d is connected to a 3 V battery. If the plate separation is increased to 2d without disconnecting the battery, what happens to (a) the voltage difference across the capacitor? (b) the charge on the capacitator?

5. There are two capacitors with capacitance $C_1 = 3\ \mu F$ and $C_2 = 7\ \mu F$. What is the equivalent capacitance if they are connected (a) in series? (b) in parallel?