Wednesday Reading Assessment: Unit 1, Electric Potential

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1 Memory Bank

- $\vec{E} = -\frac{dV}{dx}\hat{x}$ ... One dimensional case

- $\vec{E} = -\nabla V$ ... General case

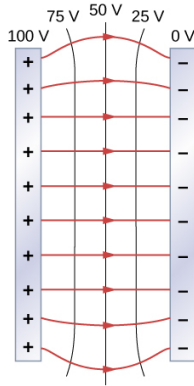## 2 Electric Potential and Potential Energy

Figure 1: Voltage is a linear function of distance from the positive plate to the negative plate.

1. Consider Fig. 1. Suppose the voltage is 100V at the positive plate. What is the voltage half-way between the plates, if the E-field is constant and the voltage at the negative plate is 0V?

2. Consider Fig. 1. Suppose the voltage is 100V at the positive plate. What is the voltage *two-thirds* of the way across, towards the negative plate?

3. If the distance between the plates is 5 mm, what is the E-field value? (Remember, it is a constant in this case).

4. Draw a graph of the voltage versus position for Fig. 1.