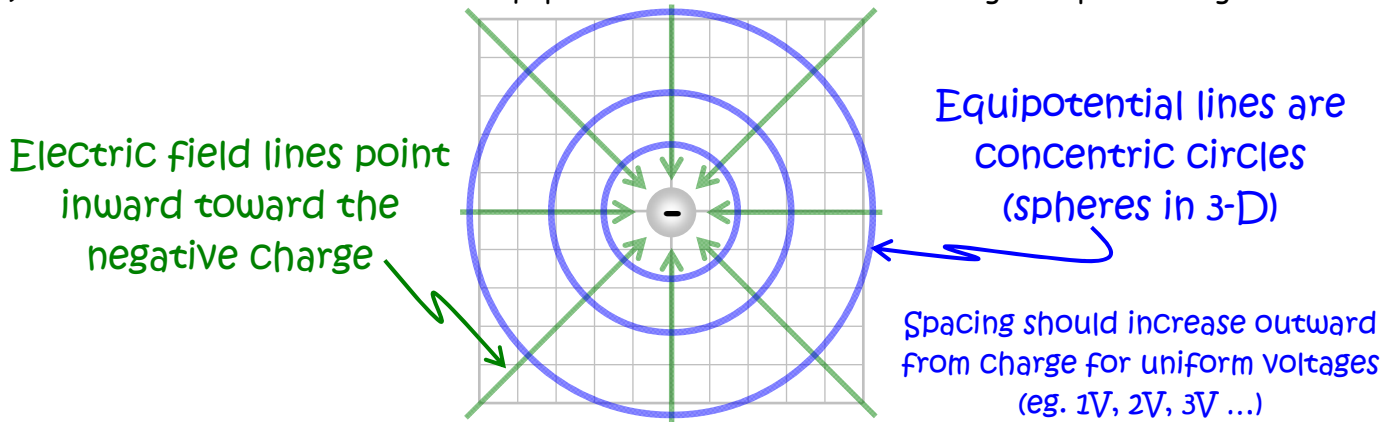


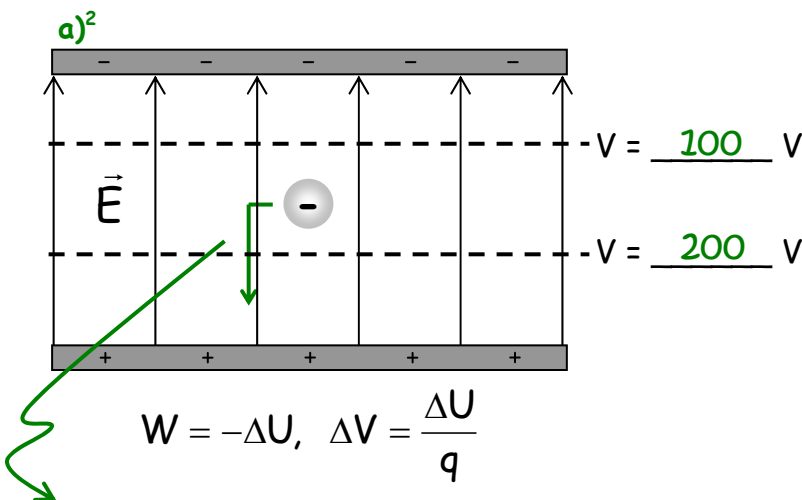
Quiz 2

1)⁴ Draw the electric field lines and equipotential lines for an isolated negative point charge.



2)⁶ If an electron moves from one point at a potential of 100.0 V to another point at a potential of 200.0 V,

- a)² For the electric field shown, indicate the direction of motion for the electron and label the dashed equipotential lines shown.
- b)² How much work is done by the electric field? Is it positive or negative? Why?
- c)² What is the change in potential energy of the electron? Is it positive or negative? Why?



Higher potential is **ALWAYS** toward the positive plate, toward higher potential energy for a + charge.

b)²

$$W = q\Delta V = (1.6 \times 10^{-19})(200 - 100)$$

$$W = 1.6 \times 10^{-17} \text{ J}$$

It's positive work because the electron moves toward smaller potential energy.

c)²

$$\Delta U = -W = -1.6 \times 10^{-17} \text{ J}$$

It's a negative because the electron moves toward smaller potential energy.

