Physics 12 U7 – Electrostatics Worksheet #2

Name: _____

Coulombs Law $F = KQQ/R^2$ vector

Electric field = $E = F/q = Kq/R^2$ vector

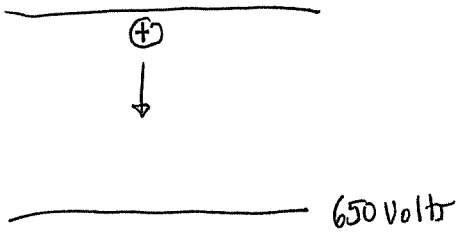
Ep= electric potential energy = KQQ/r scalar

V = electric potential = Work/q= E x d = KQ/r scalar

1. Calculate the electric potential energy stored be placing an electron 6 cm away from a 0.007 C charge.

2. How much work (change in Ep) to move an electron from 0.9 m to 0.3 m away from a 0.016 C charge.

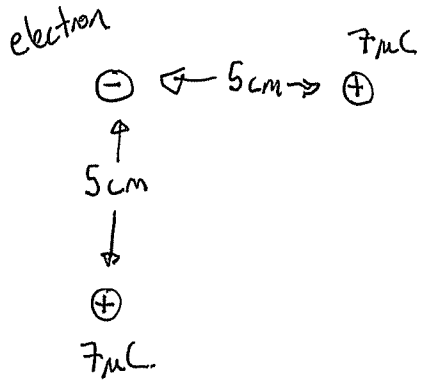
3. Calculate the work required to move an proton from the top plate (0 volts) to the bottom plate (+ 650 volts).



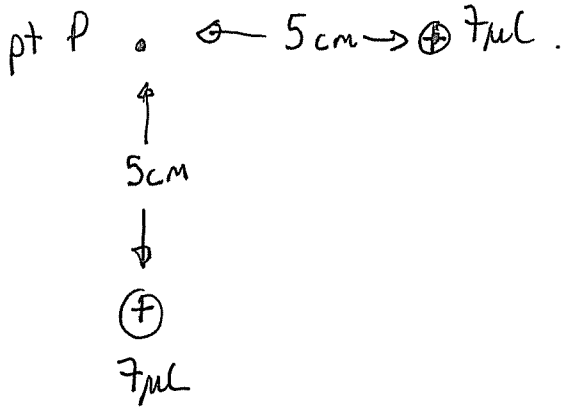
4. Calculate the voltage 0.07 m from a 6μC charge.

5. Calculate the electric field strength 0.07 m from a 6μC charge.

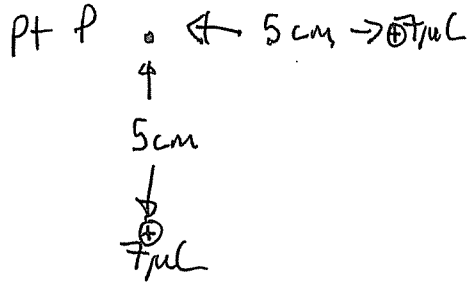
6. Calculate the force on an electron for the following charge arrangement, 5 cm from two 7μC charges at right angles.



6. Calculate the electric field strength at point P on for the following charge arrangement, 5 cm from two 7μC charges at right angles.



7. Calculate the electric potential at point P for the following charge arrangement, 5 cm from two 7μC charges at right angles.



8. Calculate the work to move a proton from infinity (where Ep=0) to point P for the following charge arrangement, 5 cm from two 7μC charges at right angles.