

Name: _____

Class Period: _____

Physics: Electric Fields & Electric Potential

Extra Credit

Mass of a proton = 1.67×10^{-27} kg

Mass of an electron = 9.11×10^{-31} kg

1. Calculate the net electric field created by three point charges all located along the x-axis. The first charge ($q_1 = + 7.70 \times 10^{-8}$ C) is located at the origin. The second charge ($q_2 = - 5.30 \times 10^{-8}$ C) is located at $x = 4.00$ m. The final charge ($q_3 = - 3.80 \times 10^{-8}$ C) is located at $x = 15.0$ m.
 - A. Sketch the three charges in their respective locations.
 - B. Find the magnitude and direction the net electric field created by all three point charges at the position $x = 10.0$ m.



2. What would have to be the minimum strength and direction of the electric field needed to levitate an electron, considering the force of gravity?