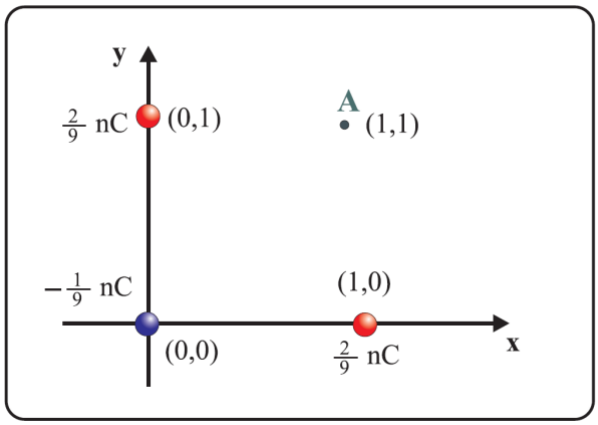
Exercise 1.1

Three electric charges are placed in the xy-plane (z = 0) as shown in the figure.



a. Determine the electric field strength at point A.

b. Determine the electric potential at point A.

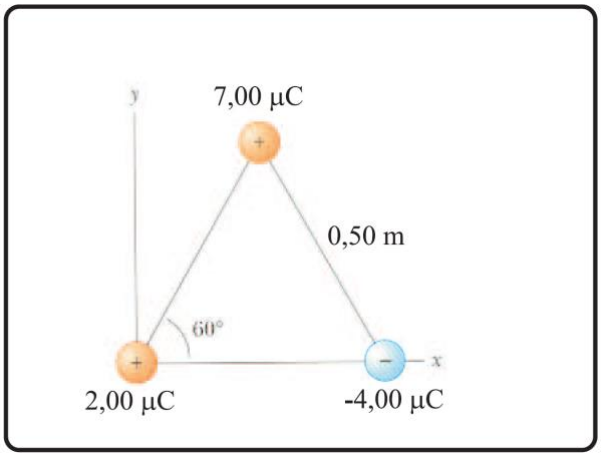
c. An electron is placed at point A. Calculate the force that affects the electron. The charge of the electron is -1.602 x 10^-19 C.

d. Given the mass of the electron is 9.107 x 10^-31 kg, calculate the acceleration of the electron.

e. Replace the three charges with respectively 2 C, 2 C, and -1 C. Calculate the magnitude of the force that will affect a charge of 1 C at point A. Convert to kg (or kp).

Exercise 1.2

Three charges are placed at the corners of an equilateral triangle as shown in the figure.



a. Calculate the electric field at the 2 μC charge caused by the other two charges.

b. Determine the force that affects the 2 μC charge.