Exercise

Electric_Part1

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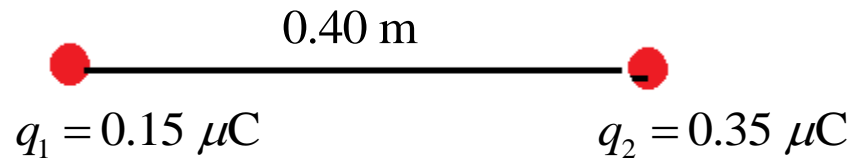
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Two charged particles are placed as shown in figure. q_1 = 0.15 μC is placed at the origin and q_2 = 0.35 μC is placed at x = 0.40 m (to the right of q_1). Determine a third charge q_3 should be placed to be at equilibrium point?

0.40 m

$q_1 = 0.15 \ \mu C$ $q_2 = 0.35 \ \mu C$

Ans : 0.158 m

Exercise 2

Two point charges q_1 and q_2 are 3.00 m apart exert a repulsive force   of 0.075 N on one another.

(i) What is the magnitude of the charge on each?

(ii) Determine the charges q_1 and q_2 if the force is attractive.

$Ans: (i)\ q = 8.666 \times 10^{-6}\ C\ (ii) q_1 = +8.666 \times 10^{-6}\ C$

$q_2 = -8.666 \times 10^{-6}\ C$

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Determine the electric force on an electron in a uniform electric field of strength 2360 N/C that points due east?

$Ans:$ 2.34×10^5 N/C; south

A charge of +5 µC is placed at x = 2 cm and a charge of -2 µC is placed at x = 7 cm from the origin (x = 0 cm). Calculate the magnitude of the electric field at the origin.

Ans : 3.556×10^9 N/C

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