Example

- Find the repulsive force between 2 protons in a nucleus if their separation is 4.0×10^{-15} m and the charge of each proton is 1.6×10^{-19} C.

- Calculate the force of gravitational attraction between the 2 protons if the mass of a proton is 1.67×10^{-27} kg.

  (use the separation value as above.)

Example

- A pair of equally charged particles A and B are placed a distance of 4.0×10^{-3} m apart and released from rest. The mass of A is 7.5×10^{-7} kg and B is 2.8×10^{-7} kg. If the initial acceleration of A is 6.0 ms^{-2} , calculate the

a.) initial acceleration of B

b.) the common charge value.

Example

- Figure shows 2 identical spheres A and B, each of mass 20g, suspended from a fixed point O on 2 insulating threads. The sphere are in equilibrium and each carries the same amount of charge, Q.
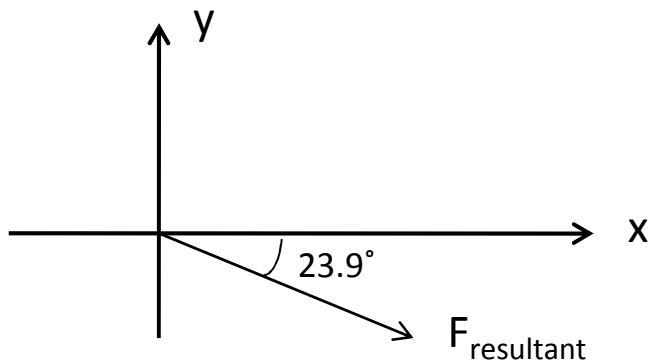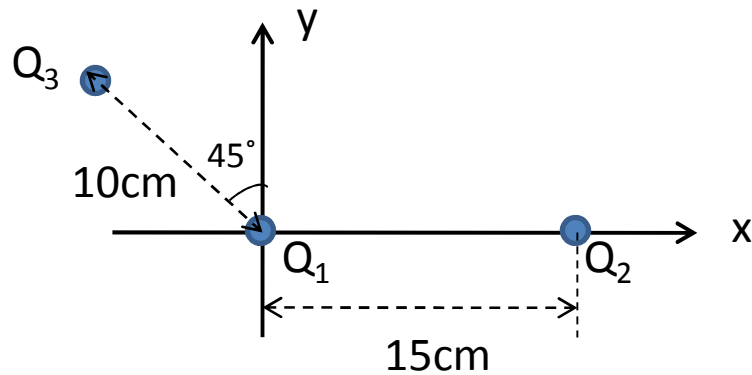
  a.) Find the charge on each sphere.
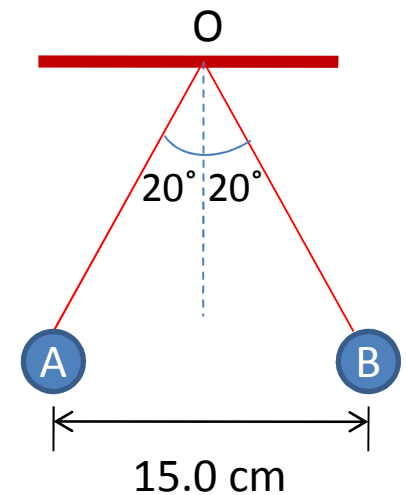
  b.) Find the electric force acting on each sphere.

O

20° 20°

A   B

15.0 cm

Example

- Figure shows 3 fixed charges $Q_1 = -1.0 \times 10^{-6}$ C, $Q_2 = 4.0 \times 10^{-6}$ C, $Q_3 = -2.0 \times 10^{-6}$ C. Find the magnitude and direction (angle from x-axis) of the resultant force that acts on Q_1

Example

- Figure shows 2 protons separate from each other by a distance of 2.8×10^{-15} m. The charge on a proton is 1.6×10^{-19} C. Find the electric field strength E at the point

  a.) P, distance 0.8×10^{-15} m from proton A.

  b.) Q, distance 0.8×10^{-15} m from proton B.

  c.) R, distance 3.5×10^{-15} m from proton A & B.