# **Coulomb’s law**



1. Two charged objects are located 1.0 m apart.
	1. Calculate the magnitude of the electric force between them if the two charges are +1.0 μC and +1.0 μC. (1.0 μC equals 1.0×10-6 C)
	2. What would be the magnitude of the force if the charges were 0.5 meters apart?
2. Two insulating spheres with charges of -7.0 μC and -12 μC, are located 10.0 centimeters apart.
	1. What is the force between them?
	2. What direction does it act?
3. How close must two 1.0 C charged objects be for their mutual force to exceed 1.0 newton? Compare that distance to something in your everyday life.
4. Two *identical* point charges are separated by 0.50 m. If the force between them is 8.0 N, what is the magnitude of each charge?
5. Three charged particles are arranged as shown along the *x*-axis. The central charge *Q* has a value of +10 μC. Charge *qA* has a value of +5.0 μC and is 1.0 m to the left of *Q*. Charge *qB* is 2.0 m to the right of *Q*.

 *qA* = +5.0 μC *Q* = +10 μC *qB* = ?

 1.0 m 2.0 m

1. The net force on charge *Q* is zero. What is the value of *qB* (magnitude and sign)?
2. If the value of charge *Q* is doubled, how does that change your answer to part a?