

Coulomb's Law Worksheet

- Two charged spheres 10 cm apart attract each other with a force of 3.0×10^{-6} N. What force results from each of the following changes, considered separately?
 - Both charges are doubled and the distance remains the same.
 - An uncharged, identical sphere is touched to one of the spheres, and then taken far away.
 - The separation is increased to 30 cm.
- The force of electrostatic repulsion between two small positively charged objects, A and B, is 3.6×10^{-5} N when $AB = 0.12$ m. What is the force of repulsion if AB is increased to
 - 0.24 m
 - 0.36 m
- Calculate the force between charges of 5.0×10^{-8} C and 1.0×10^{-7} C if they are 5.0 cm apart.
- What is the magnitude of the force a 1.5×10^{-6} C charge exerts on a 3.2×10^{-4} C charge located 1.5 m away?
- Two spheres; 4.0 cm apart, attract each other with a force of 1.2×10^{-9} N. Determine the magnitude of the charge on each, if one has twice the charge (of the opposite sign) as the other.
- Two equal charges of magnitude 1.1×10^{-7} C experience an electrostatic force of 4.2×10^{-4} N. How far apart are the centers of the two charges?
- How many electrons must be removed from a neutral, isolated conducting sphere to give it a positive charge of 8.0×10^{-8} C?
- What will be the force of electric repulsion between two small spheres placed 1.0 m apart, if each has a deficit of 10^8 electrons?
- Two balloons are charged with an identical quantity and type of charge: -6.25×10^{-9} C. They are held apart at a separation distance of 61.7 cm. Determine the magnitude of the electrical force of repulsion between them.
- Two balloons with charges of $+3.37 \times 10^{-6}$ C and -8.21×10^{-6} C attract each other with a force of 0.0626 N. Determine the separation distance between the two balloons.