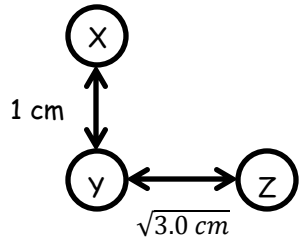
Name _____ Date _____ Period _____

1. An electric force of 2.5×10^{-4} N acts between two small equally charged spheres which are 2.0 cm apart. Calculate the force acting between the spheres if the charge on one sphere doubles and the spheres move to a 5.0 cm separation.

2. Two equally charged spheres, X and Y, repel each other with a force of 8.0×10^{-6} N when placed a certain distance apart. Another identical, but uncharged, sphere is touched to sphere Y and then moved next to sphere X. Calculate the electric force acting on sphere Y.

3. Three equally charged spheres are placed as shown below. A force of 6.0×10^{-4} N acts between spheres X and Z. The charges on the spheres have the same sign. Calculate the net force acting on sphere Y.



4. Calculate the electric force acting between two 1.0 C charges separated by the diameter of the earth. Earth's radius is 6.4×10^{6} m. The constant in Coulomb's Law if 9.0×10^{9} Nm^2/C^2.

5. A charge of 4.0×10^{-5} C is attracted by a second charge with a 350 N force when the separation is 10.0 cm. Calculate the magnitude of the second charge.