$$F_{el} = k\frac{Q_1 Q_2}{d^2} \quad k = 9.0 \times 10^9 \; \tfrac{n \cdot m^2}{c^2}$$

1. Find the force between charges of +10.0 μC and -50.0 μC located 20.0 cm apart.

2. Two spheres have identical charges and are 75 cm apart. The force between them is +0.30 N. What is the magnitude of the charge on each sphere? (*Let x = charge*)

    What can you tell about the charge signs on the spheres? _____

3. Consider the electric force between a pair of charged particles a certain distance apart. By Coulomb's Law:
    a. If the charge of one of the particles is doubled, the force is–
        (unchanged) (halved) (doubled) (quadrupled)
    b. If, instead, the charge of both particles is doubled, the force is–
        (unchanged) (halved) (doubled) (quadrupled)
    c. If, instead, the distance between the particles is doubled, the force becomes–   **(one fourth) (half) (double) (4 times)**
    d. If the distance is halved and the charges of both particles are doubled, the force is _____ as great.

4. What is the distance between two spheres, each with a charge of 2.5 X 10^{-6} C, when the force between them is 0.50 N?