Name _____ Date_____ Block _____

Physics
Electrostatic Force Worksheet

1. Determine the magnitude and direction of the electrostatic force on charge 1 if it is 0.2 m away from charge 2. Draw a vector on each charge to represent the direction of the force.

2. What would happen to the magnitude of the force if I doubled one of the charges?

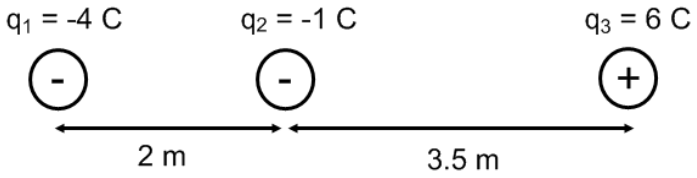
3. Determine the magnitude and direction of the electrostatic force on charge 2 if it is 4 m away from charge 1. Draw a vector on each charge to represent the direction of the force.

4. What would happen to the magnitude of the force if I bring the charges to 2m? (half the distance)

5. Determine the magnitude and direction of the net electrostatic force on charge 1 if the two charges are separated by a distance of 1.3 m.

6. Using the same picture from #5, determine the magnitude and direction of the net electrostatic force on charge 2.

7. Use the following diagram to answer the questions below:



a. Determine the magnitude and direction of the net electrostatic force on charge 1.

b. Determine the magnitude and direction of the net electrostatic force on charge 3.

8.

a) If the two spheres are touched together what is the new charge on each?

b) How many electrons do I have to add/remove to either sphere to make it neutral?

Two small neutral metal spheres have been charged as shown.

Circle whether the spheres have had electrons added or removed and then calculate that amount.

$q_1 = -4\ \mu C$ $q_2 = 3\ \mu C$

Added Added

Removed Removed

#_____ #_____

The spheres are then touched together. Calculate the following;

Initial net charge_____

Final charge on q_1_____

1(Answer: 1.2×10^{10} N left)
2(Answer: 2.7 N)
3Doubles
4 (Answer: 0.0056 N)
5(Answer: 1.6×10^{-8} N)
6(Answer: 1.6×10^{-8} N)
7.(Answer: 1.86×10^{9} N left)