PH 122: Recitation Week 2

Names of group members: ___________________________________________________

Defining Relationships: Coulomb’s Law

The force between two charges is described by Coulomb’s Law:

\[ F_{1 \text{ on } 2} = F_{2 \text{ on } 1} = \frac{K|q_1||q_2|}{r^2} \]

Define this relationship in the space below:

- Define each of the terms in the equation, including:
  - What distance is represented by \( r \)?
  - What is \( q \)? What are the units?
  - Why do the two values for \( q \) have absolute value symbols around them?
- How do you determine the direction of the force?
- What value do we use for \( K \)? (2 significant figures, please.)
- Consider scaling.
  - What happens to the force if you double the distance?
  - What happens to the force if you double one of the charges?

You may refer to the book or notes as you complete this assignment, but do not copy directly.

Please complete your work within the box below.

\[ F_{1 \text{ on } 2} = F_{2 \text{ on } 1} = \frac{K|q_1||q_2|}{r^2} \]
Charges and Forces

Compute the magnitude and direction of the net force on the negative charge in the following arrangement.

1. First, draw arrows to represent the direction of the force due to each of the positive charges.

2. Second, compute the magnitude of the force due to each of the positive charges.

3. Third, compute the net force on the negative charge.

+3.0 nC  -1.0 nC  +2.0 nC