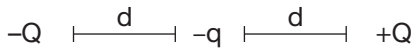
FLINN SCIENTIFIC

Name_____

AP Physics 2 Review Questions

Integrating Content, Inquiry, and Reasoning

1. Coulomb's law allows for the calculation of the electric force between two point charges. Consider the figure below.



A student made this statement regarding the system:

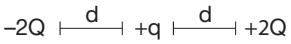
"According to Coulomb's law, the force due to the –Q charge is negative and the force due to the +Q charge is positive. Therefore, the forces cancel each other out and the net electric force on the –q charge is zero."

a. Do you agree with this statement? Explain.

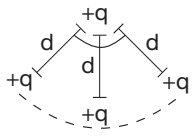
b. How can Coulomb's law be applied in situations where there are more than two point charges?

2. Rank, in increasing magnitude, the four charge configurations below according to the magnitude of the net electric force on charge +q. Explain why you made your selections.

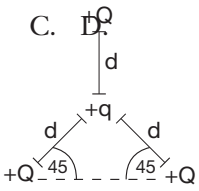
A.



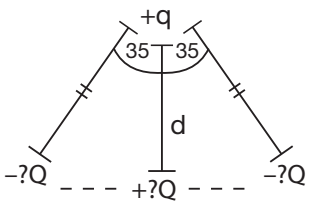
B.



C. D.



3. Consider the situation below.



a. If the system is at equilibrium, what is the ratio of the magnitude of charge of +Q to –Q?

b. If +Q = 10 C, what is the value of charge on the –Q charges?

c. Derive an equation that represents the electric force on charge +q. The distance of the –Q charge from the +q charge is s.