Name ________________________ Physics

Graphing Coulomb’s Force Activity

Intro: States that the magnitude of the electrostatic force between two point charges is directly proportional to the product of the charges and inversely proportional to the square of the distance between them

Where:
k = electrostatic constant = $8.99 \times 10^9\ N \bullet m^2 / C^2$
q = charge in coulombs
F_e = Force in Newtons (N)
r = distance between charges in meters

$$F_e = k \frac{q_1 q_2}{r^2}$$

Purpose: To calculate the force exerted between two charges at varying distance and to graph the relationship between force and distance.

Procedure:
Determine the force between the two charges at listed at the following distances
Graph force vs. distance and connect the data points with a smooth curved line
Use a pencil for the graph
Show all work for the force calculations (include equation, substitution and final answers with units)

Distance = 1m

Distance = 2m

Distance = 3m

Distance = 4m

Distance = 5m

Distance = 6m

Distance = 7m

Distance = 8m

Distance = 9m

Distance = 10m