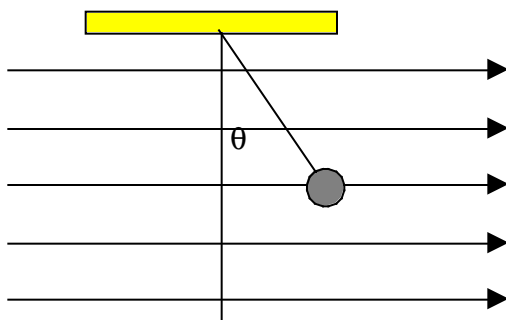


Suspended Charges—Angle ¹³⁸

The figure below shows a charged sphere that is suspended from a string in a uniform electric field that is pointing in the horizontal direction. Six possible combinations of sphere mass and electric charge are listed in the chart below. All of these spheres are suspended in the same uniform field and the gravitational field is directed downward. When the spheres are placed in the field they will swing away from vertical and hang at an angle θ from the vertical as shown in the diagram.

Rank, from greatest to least, the angle θ the string will form with the vertical for these different spheres.



Case	A	B	C	D	E	F
Mass (g)	3	6	9	3	6	9
Charge (nC)	8	4	2	2	8	4

Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ Least

Or, all of the angles will be the same. _____

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed

Sure

Very Sure

1 2 3 4 5 6 7 8 9 10

¹³⁸ G. Fazzari, A. Weiner, T. Bennie-George, O. Selgrad, C. Hieggelke