

PHYSICS 2401

Lab Homework

Force Between Hanging Pith Balls

This homework will be due when you come to class the week of February 3.

In lab you measured the force between two charged pith balls where the pith balls were of the same size and mass. Your assumption was that the charge on the balls was the same.

Consider this change to that situation. You charge the balls so that they hang a distance r apart. Then you step out to get a drink of water, and when you return, you find the distance between the pith balls is half what it was before you got a drink. In terms of the length L , the charge Q , and the original angle θ , find the new charge on the pith balls and the new angle at which they hang. To receive credit, you must show your work. (10 pts each)