

PHYS 4392

Fall 2014

TE Coan

Due: 3 Oct '14 6:00 pm

Homework 5

1. A charge q is placed a distance r_0 away from the center of a conducting sphere of radius R ($r_0 > R$). Suppose the sphere is held somehow at some potential V_0 (relative to infinity). I don't know, maybe $V_0 = 100$ Volts, who knows.

Calculate the force \vec{F} between the charge q and the sphere if the sphere is *neutral*. Your answer should involve V_0 , **not** 100 Volts. Is the force attractive or repulsive? This problem is not computationally intensive.