

# PHYC 511: Electrodynamics

Spring 2018

## Homework Assignment #1

(Due January 31, 2018)

**1-** Consider a charge  $q$  at the origin surrounded by uniform surface charge and dipole layer densities at the surface of a sphere with radius  $R$  (centered at the charge  $q$ ). Find the charge and dipole densities that lead to zero electric potential outside the sphere while keeping it unchanged inside from that of the point charge alone.

**2-** Problem 1.7, Jackson.

**3-** Problem 1.11, Jackson.

**4-** Problem 1.12, Jackson.

**5-** Problem 1.13, Jackson.