

PHYS3122A Homework 7, due at 5pm on 10/23/2008

1. Solve problems 3.13, 3.14, 3.16, 3.17, 3.20, 3.21, 3.26
2. The potential at the surface of a sphere (radius R) is given by

$$V_0(\theta) = k \sin^2 \frac{\theta}{2}$$

The spaces inside and outside the sphere are empty. Find the electrostatic potential at any points in space. What is the charge distribution on the surface of the sphere?

Hint: $V_0(\theta) = k [P_0(\cos \theta) - P_2(\cos \theta)]/2$.