HW assignment 6. Due Wed Oct 12 at 7 p.m. by e-mail or in my mailbox.

Problem

The potential at the surface of the sphere of radius R is given by

$$V_0(\theta) \;=\; k\cos 3\theta$$

Assuming that there are no charges inside or outside the sphere, find:

(a) the potential inside and outside the sphere,

and

(b) the surface charge density on the sphere.