Assignment 5
PHGN361

Homework due Feb. 25

1. Chapter 3 problems

   23 (the solution should have a constant + $\ln(s)$ + sum on $\cos(k\phi)$ and $\sin(k\phi)$ with coefficients of s^k and s^{-k}),

   24 (follow ex 3.8 but with different coordinate system).

   26 (ans/hint quadrupole term: $\frac{k\pi^2 R^5}{4\pi\epsilon_0 48 z^3}$),

   29 (V_{oct} is proportional to $(5\cos^3\theta - 3\cos\theta)$),

2. Chapter 4 problems 1 (10^8 V,

   4 (force proportional to r^{-5}),

   5 (torque proportional to the product of the dipole moments and r^{-3}),

   9 (a. force proportional to r^{-3} and $\overrightarrow{p} - 3\overrightarrow{p}\cdot\hat{r}\,\hat{r}$),

   10,

   11.