Physics 213. Electricity and Magnetism. Professor Dine

Winter, 2011. Homework Set 5. Due Tues., March 8

Note the due date. There will be one more problem set after this one.
Problem numbers refer to your textbook.

1. Determine the cross section for scattering of a linearly polarized wave by a charge carrying out small vibrations under the influence of an elastic force (i.e. an oscillator).

2. From the handout on the multipole expansion for radiation, work through the details for the expansion in the case of electric moments, i.e. for $\vec{r}\cdot\vec{E}$. Do this by considering the expansion in the intermediate zone, and matching onto the behavior in the radiation zone. (This is more or less done in the handout, posted on the web, but some details are missing and some formulae may not be reliable at the level of constant factors, etc.)

3. Jackson 10.1.