

Phys221 Assignment #3

Due: 10:20am Friday May 22, 2009

Part 1. Textbook (Ulaby, Chapter 4, page 111):

4.15, 4.25, 4.29.

Part 2. An electric dipole consists of two charges q and $-q$ located at $(0, 0, d/2)$ and $(0, 0, -d/2)$ respectively.

(a) Determine the electric potential V at any point $P(x, y, z)$ in free space, given that P is far away from the dipole.

(b) Determine the electric field $\mathbf{E}$ (both magnitude and direction) at point P .