1) PE4.14

2) 4.38

3) 4.39 First, find a general expression for the vector electric field.

4) 4.46 Also, find the potential between the two points.

5) 4.62

6) 4.65 First, find the energy density w_E.

Extra Credit: A thin-walled, very long cylindrical conductor of radius 5 cm, concentric with the z-axis in free space, supports a surface charge density of -8 $\mu C/m^2$. Determine the vector electric field for $\rho < 5$cm and $\rho > 5$ cm. [Hint: Note the perfect cylindrical symmetry.]

Note: Unless otherwise specified, all locations are in meters.

Due Thursday, October 31, 2024 by 11 am
at my office (EEP 314) or EECS department mail box.