



Princess Sumaya University for Technology
Communication Engineering Department
Electromagnetics I
Quiz 2

A charge distribution with spherical symmetry has a density:

$$\rho_v = \begin{cases} \rho_o(a^2 - r^2), & r < a \\ 0, & r > a \end{cases}$$

- Find $\mathbf{E}$ and V for $r \geq a$.
- Find $\mathbf{E}$ and V for $r \leq a$.
- Find the total charge.
- Show that $\mathbf{E}$ is maximum when $r = 0.745 a$.