

System	Infinite line of charge	Infinite plane of charge	Uniformly charged solid sphere
Figure			
Identify the symmetry	Cylindrical	Planar	Spherical
Determine the direction of \vec{E}			
Divide the space into different regions	$r > 0$	$z > 0$ and $z < 0$	$r \leq a$ and $r \geq a$
Choose Gaussian surface	 Coaxial cylinder	 Gaussian pillbox	
Calculate electric flux	$\Phi_E = E(2\pi rl)$	$\Phi_E = EA + EA = 2EA$	$\Phi_E = E(4\pi r^2)$
Calculate enclosed charge q_{in}	$q_{enc} = \lambda l$	$q_{enc} = \sigma A$	$q_{enc} = \begin{cases} Q(r/a)^3 & r \leq a \\ Q & r \geq a \end{cases}$
Apply Gauss's law $\Phi_E = q_{in} / \epsilon_0$ to find E	$E = \frac{\lambda}{2\pi\epsilon_0 r}$	$E = \frac{\sigma}{2\epsilon_0}$	$E = \begin{cases} \frac{Qr}{4\pi\epsilon_0 a^3}, & r \leq a \\ \frac{Q}{4\pi\epsilon_0 r^2}, & r \geq a \end{cases}$