

Find the electric field as a function of radius for a solid cylinder, radius B, with positive charge density ρ inside.

- Find the electric field as a function of radius for both cases: $r < B$ and $r > B$ in terms of the charge density ρ , the radius, r , and constants.
- Sketch your Gaussian surface and the electric field. Show the angle between vectors.

Volume of cylinder of radius r , length H is $V = H \pi r^2$ Area of surfaces of cylinder are: $A = 2 \pi r H + 2 \pi r^2$

Gauss Law $\oint \vec{E} \cdot d\vec{a} = \frac{Q_{\text{enc}}}{\epsilon_0}$