Electric Field of Uniformly Charged Spherical Shell

- Radius of charged spherical shell: R
- Electric charge on spherical shell: $Q = \sigma A = 4\pi\sigma R^2$.
- Use a concentric Gaussian sphere of radius r.
- $r > R$: $E(4\pi r^2) = \dfrac{Q}{\epsilon_0}$

  $\Rightarrow \; E = \dfrac{1}{4\pi\epsilon_0}\dfrac{Q}{r^2}$
- $r < R$: $E(4\pi r^2) = \dfrac{Q_{in}}{\epsilon_0} = 0$

  $\Rightarrow \; E = 0$