MID

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- E
- V

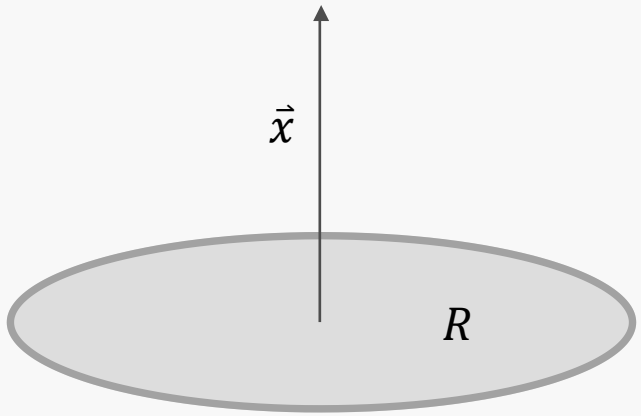
- Point
- Line
- Ring
- Cylinder
- Plane
- Sphere

Example1: Point

- $\vec{F} = \frac{1}{4\pi\epsilon_0}\frac{q_1 q_2}{r^2}\hat{r}$
- $\vec{E} = \frac{1}{4\pi\epsilon_0}\frac{q}{r^2}\hat{r}$
- $V = \frac{1}{4\pi\epsilon_0}\frac{q}{r}$

Example2: Plane

- *Finite:*
- $\vec{E} = \frac{\sigma}{2\epsilon_0}(1 - \frac{1}{\sqrt{\frac{R^2}{x^2}+1}})\hat{x}$
- *Infinite:*
- $\vec{E} = \frac{\sigma}{2\epsilon_0}\hat{x}$



Example 3: Plane

- *Infinite:*
- $\vec{E} = \frac{\sigma}{2\epsilon_0}\hat{x}$
- *Near a surface of an object:*
- $\vec{E} = \frac{\sigma}{\epsilon_0}\hat{x}$
- *Between two plane:*
- $\vec{E} = \frac{\sigma}{\epsilon_0}\hat{x}$
- $C = \epsilon_0 A/d$

Gauss' Law

- Write the chosen surface and the origin equation.
- $\int \vec{E} \cdot d\vec{A} = E * A = \frac{\mathrm{Q}}{\epsilon_0}$