$$\oint\limits_{surface} \vec{E} \cdot d\vec{A} = \frac{Q_{enc}}{\varepsilon_o}$$

ALWAYS TRUE!

If choose a Gaussian surface that is entirely in metal, then $E = 0$ so $Q_{enclosed}$ must also be zero!

$$E = \frac{Q_{enc}}{A\varepsilon_o}$$

How Does This Work?

Charges in conductor move to surfaces to make $Q_{enclosed} = 0$.

We say charge is induced on the surfaces of conductors