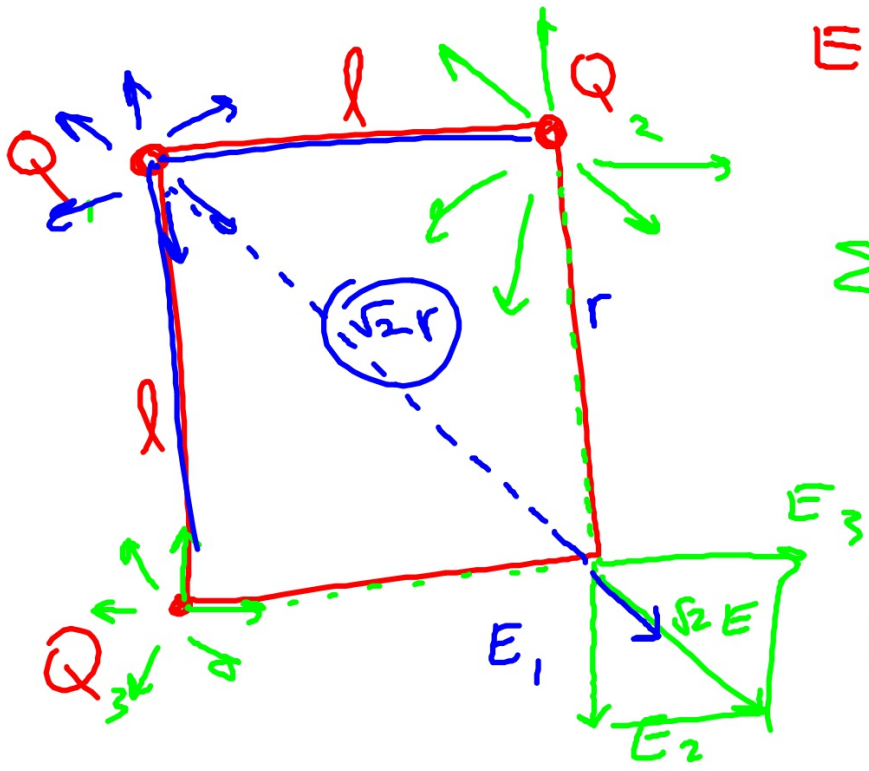


$$E = \frac{kQ}{r^2}$$

$$\Sigma \vec{E}_2 + \vec{E}_3$$

$$\frac{1}{2}\,\frac{kQ}{r^2}$$

$$E_1 = \frac{kQ}{(\sqrt{2}r)^2}$$

$$\Sigma E = \frac{kQ}{r^2}\left(\frac{1}{2} + \sqrt{2}\right)$$

$$\frac{9\times10^{9}\cdot 3.25\times10^{-6}}{(1.22\,m)^2}\cdot\left(\frac{1}{2} + \sqrt{2}\right)$$

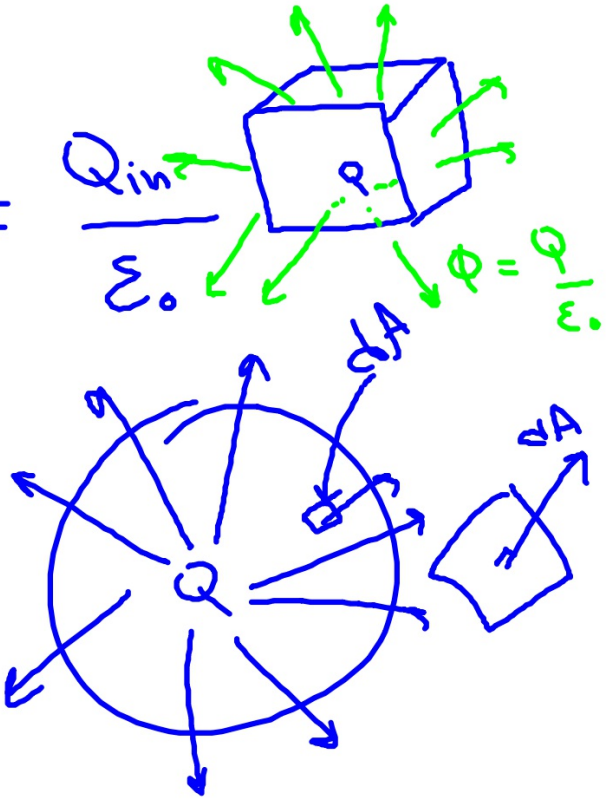
GAUSS'S LAW

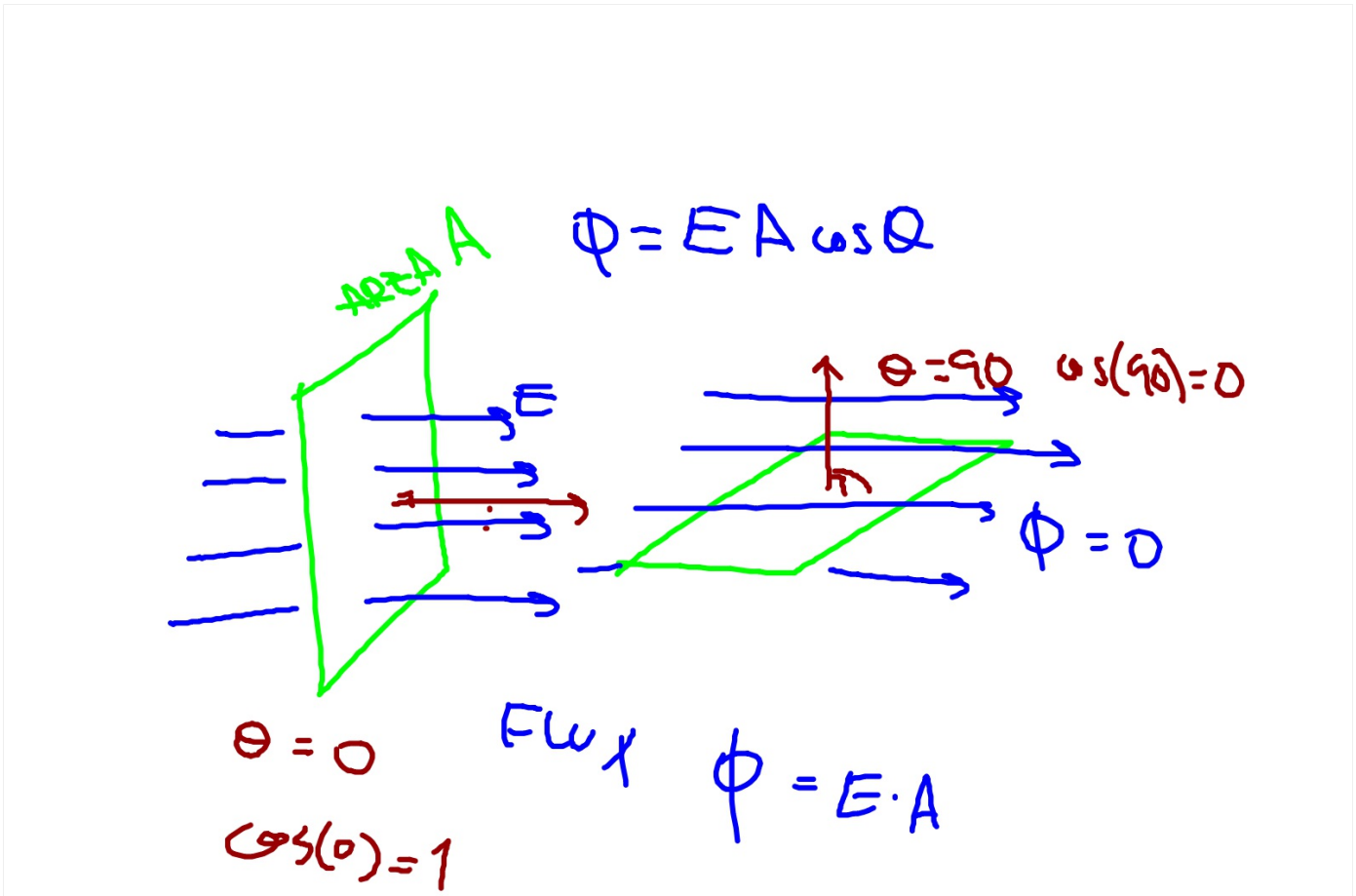
FLUX THROUGH ANY CLOSED SURFACE DEPENDS ONLY ON CHARGE INSIDE SURFACE

$$\Phi = \oint \vec{E} \cdot \vec{dA} = \frac{Q_{in}}{\varepsilon_0}$$

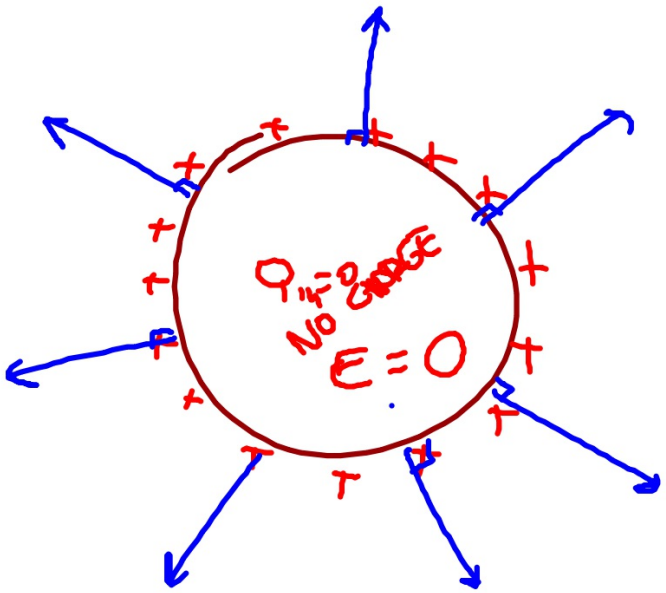
FLUX

E · AREA




$\Phi = EA\cos\theta$
AREA A
E
$\theta = 90$
$\cos(90) = 0$
$\Phi = 0$
$\theta = 0$
$\cos(0) = 1$
FLUX
$\Phi = E \cdot A$

ALL CHARGE ON A CONDUCTOR IS ON THE SURFACE



$$E \cdot A = \frac{Q_{in}}{\varepsilon_0}$$