a) $V_0 = -\int_0^a E\,dz$

$E_z = \frac{-V_0}{a}$

$D_N = \ell_s = \epsilon_0 E_N = -\frac{\epsilon_0 V_0}{a}$

$Q = \int \ell_s\,ds = -\frac{\epsilon_0 S_0 V_0}{a}$

b) $Q_2 = C_{22}V_2 + C_{12}(V_2 - V_1) + C_{23}(V_2 - V_3)$

$= \frac{\epsilon_0 S_0}{a-x}(V - V_0) + \frac{\epsilon_0 S_0}{x} V$

c) $V_0 = -\int_0^a E\,dz = -E_1 x - E_2(a-x)$

$\ell_s = -\frac{\epsilon_0 V_0}{a} = \epsilon_0 (E_2 - E_1)$

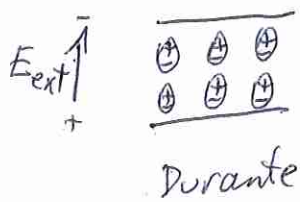
$E_1 = \frac{-V_0 x}{a^2}$

$E_2 = -\frac{V_0 (a+x)}{a^2}$

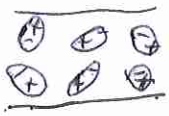
d) $Q_2' = C_{12}(V_2 - V_1) + C_{23}(V_2 - V_3) = \frac{\epsilon_0 S_0}{a-x}(V_0 - V_0) + \frac{\epsilon_0 S_0}{x} V_0 = \frac{\epsilon_0 S_0 V_0}{x}$

$\Delta Q_2 = \frac{\epsilon_0 S_0 V_0}{x} + \frac{\epsilon_0 S_0 V_0}{a} = \frac{\epsilon_0 S_0 V_0 (a+x)}{xa}$

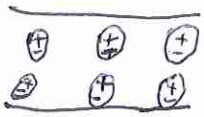
e)



Durante



antes



Después

Se almacena a través de la Polarización de los dipolos del material dieléctrico. Luego de aplicar E_{ext} los dipolos permanecen polarizados hasta descargarse o que la temperatura o vibraciones lo despolaricen.