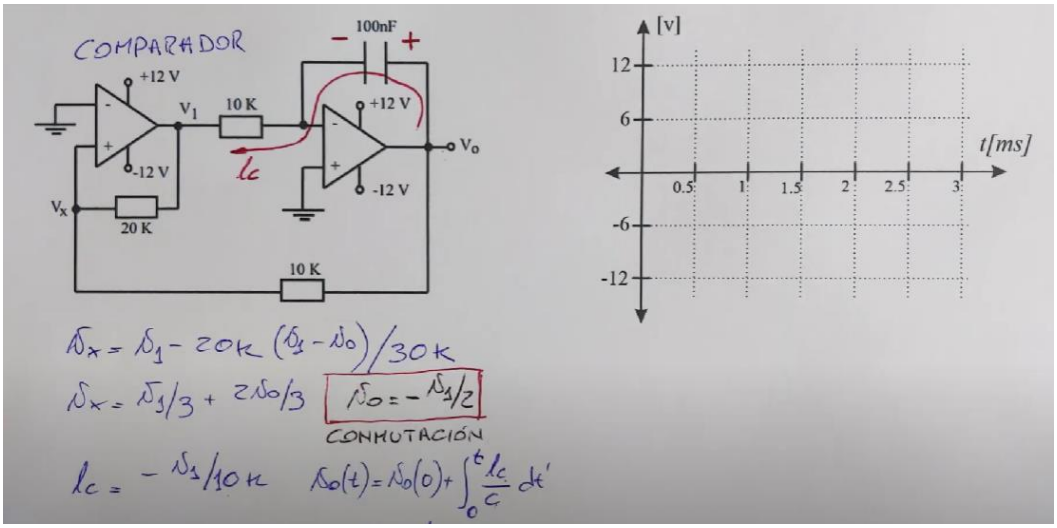


$$V_x = V_1 - 20k\,(V_1 - V_o)/30k$$

$$V_x = V_1/3 + 2V_o/3 \qquad \boxed{V_o = -V_1/2}$$

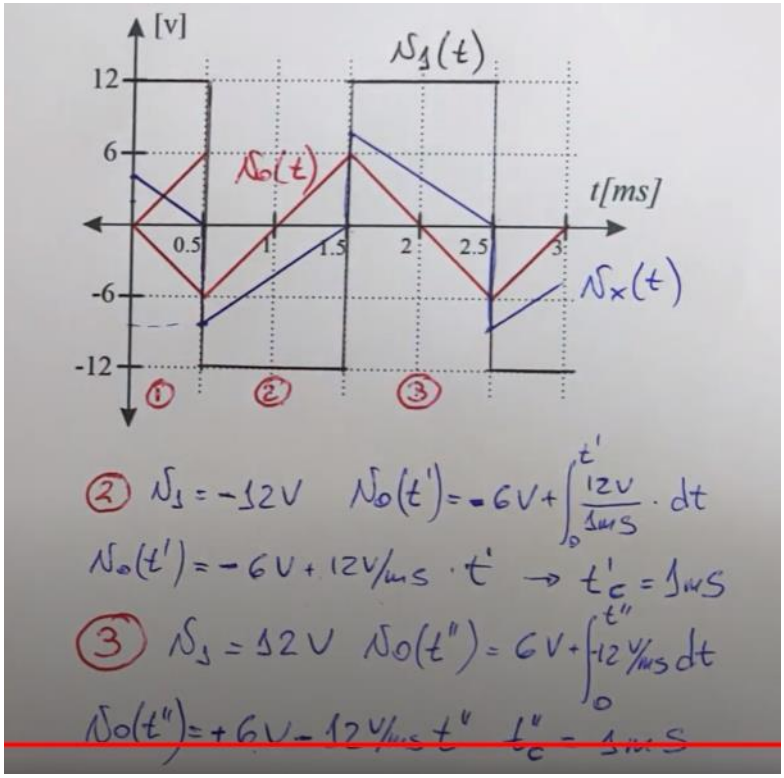
CONMUTACIÓN

$$I_c = -V_1/10k \qquad V_o(t) = V_o(0) + \int_0^t \frac{I_c}{C}\,dt'$$

① $V_1 = +12V \qquad V_o(t) = \dfrac{-12V \cdot t}{10k \cdot 100n}$

$$\frac{-12V \cdot t_c}{1mS} = -6V \longrightarrow t_c = 500\mu S$$

$$V_o(t_c) = -6V$$



Tener en cuenta las corrientes de desajustes que cambian la pendiente de la tensión de salida