

Ασκ. 5.67

$$l = 0,25 \text{ m}$$

$$R^* = 10 \Omega$$

$$v = 0,05 \text{ m/s}$$

$$B = 0,4 \text{ T}$$

$$d = 0,4 \text{ m}$$

$$R = R^* \cdot 4l =$$

$$R = 10$$

$$t_1 = \frac{l}{v} = \frac{0,25}{0,05} = 5 \text{ sec}$$

$$t_2 = \frac{d-l}{v} = \frac{0,15}{0,05} = 3 \text{ sec}$$

$$t_3 = \frac{l}{v} = 5 \text{ sec}$$

$t_1 = \text{χρόνος εισόδου}$

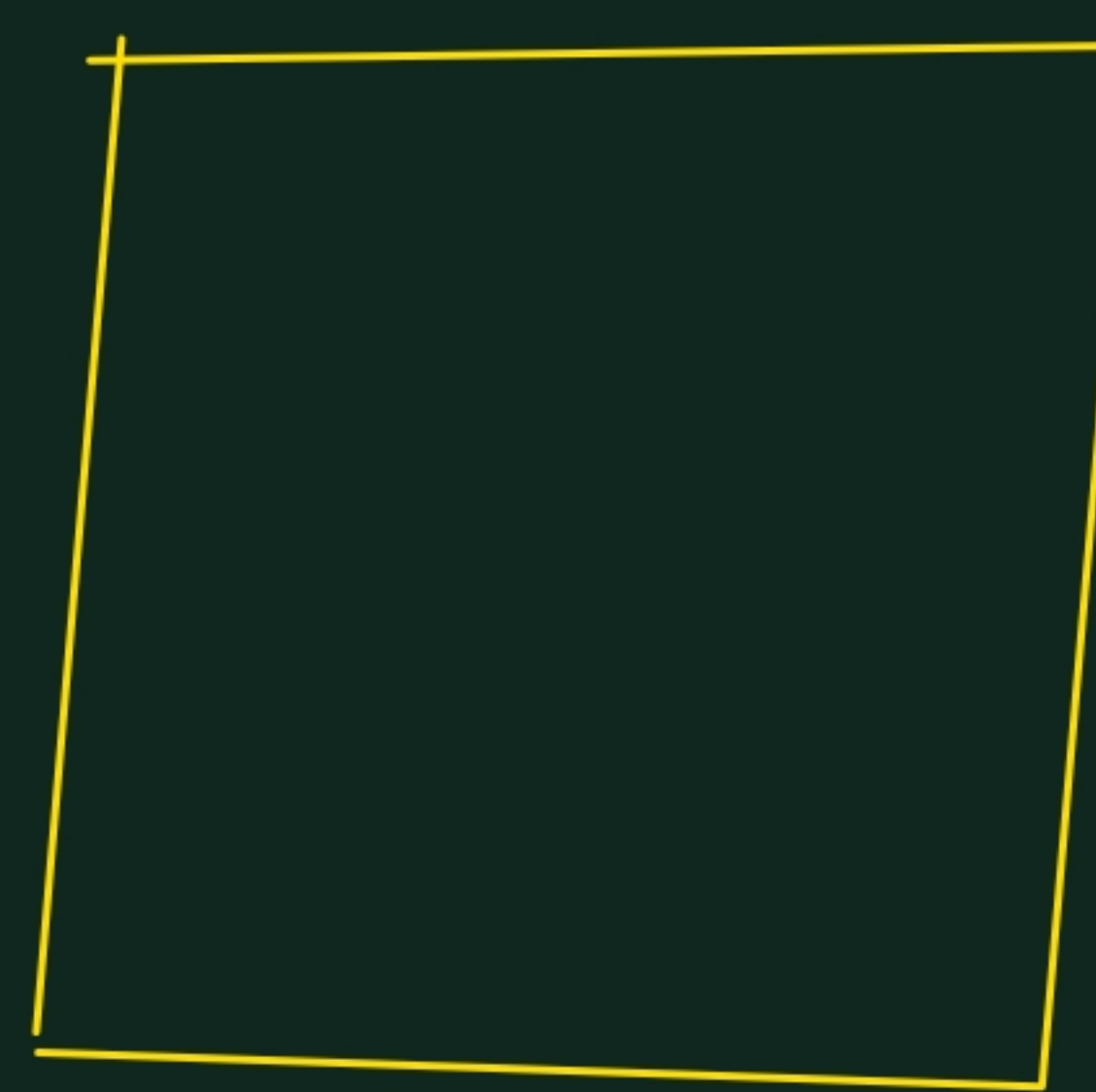
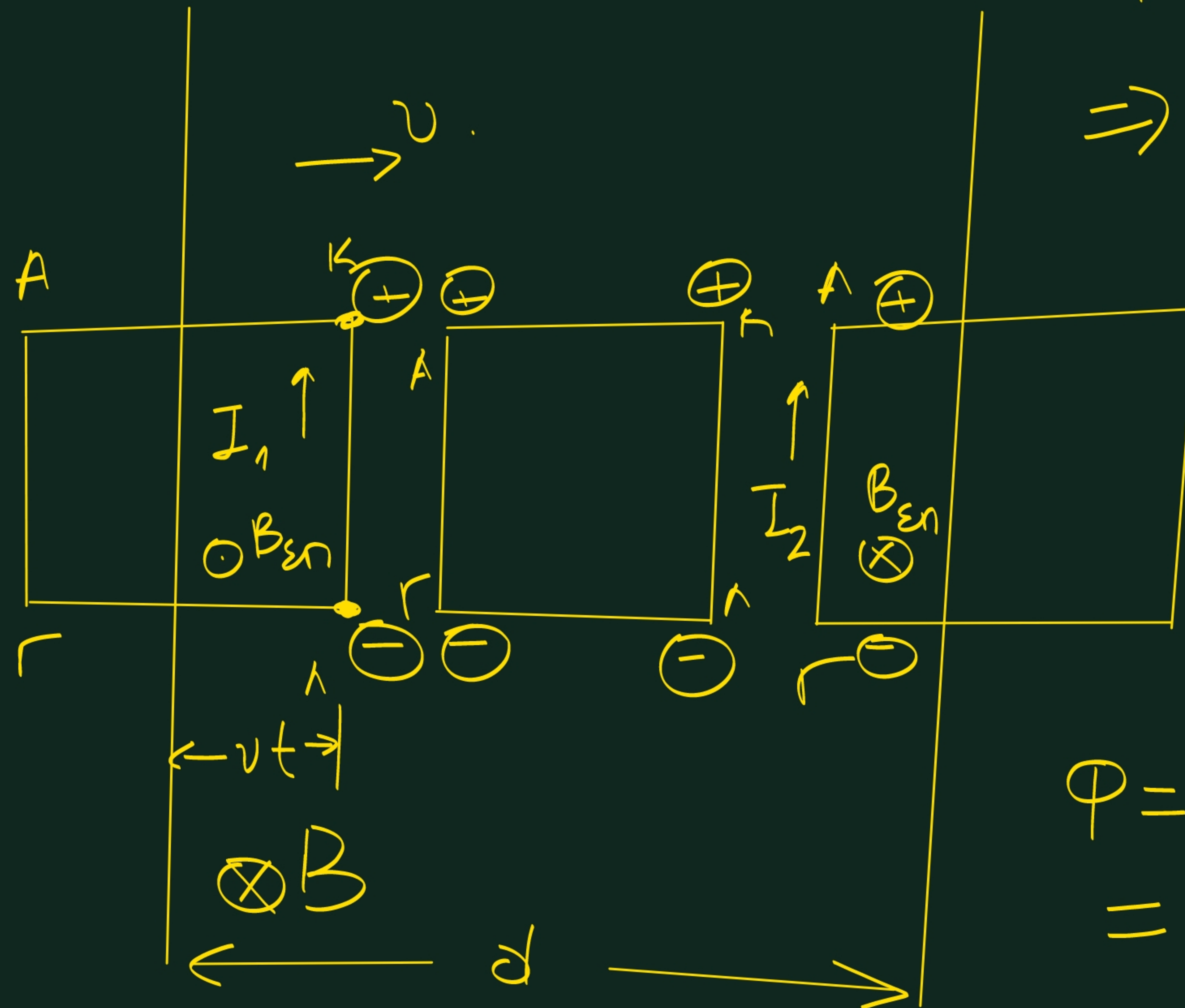
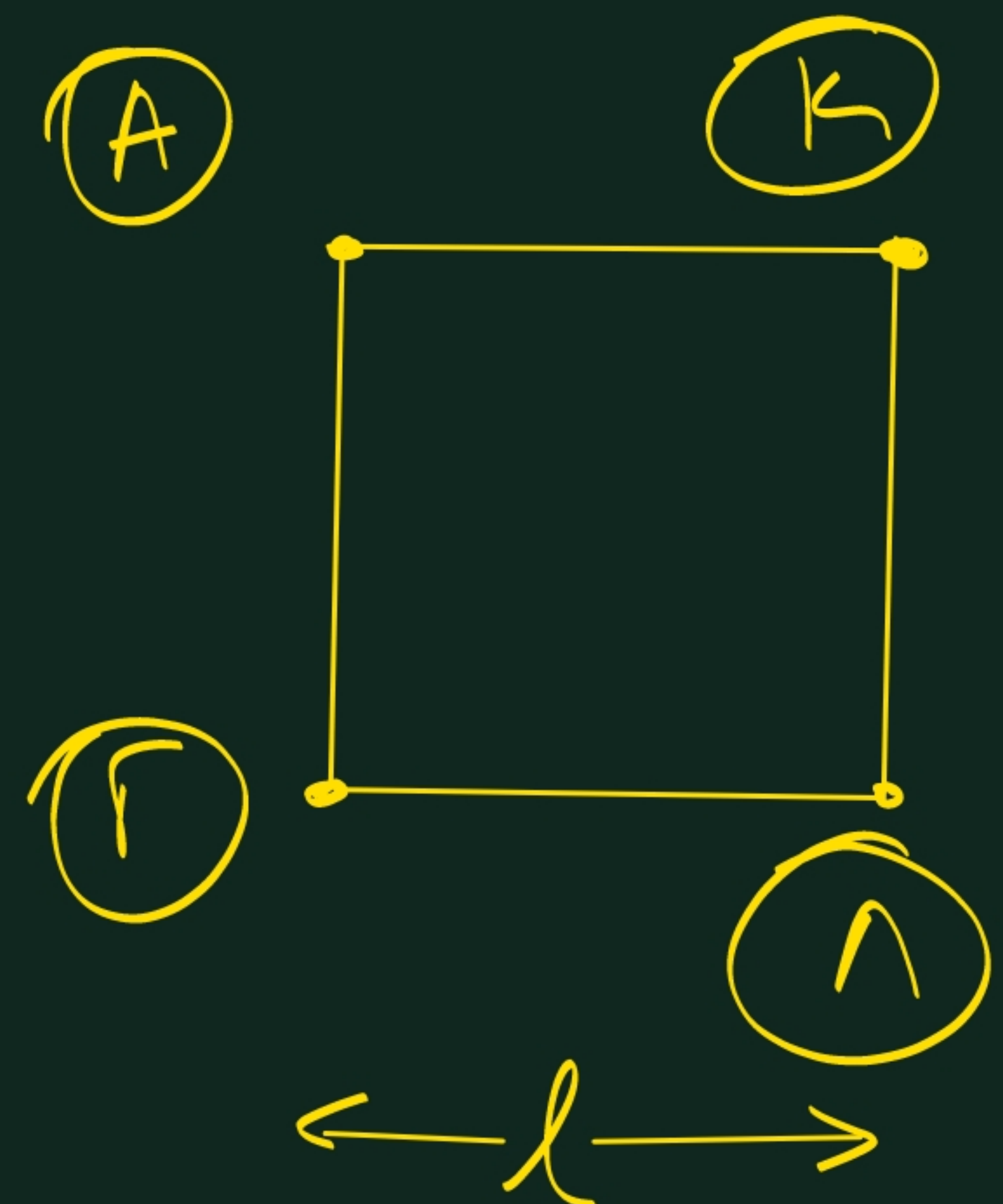
$t_2 = \text{χρόνος στο πεδίο}$

$t_3 = \text{χρόνος εξόδου.}$

$$\Phi = Blvt = 0,4 \cdot 0,25 \cdot 0,05t$$

$$\Rightarrow \Phi = 0,1 \cdot 0,05t = 5 \cdot 10^{-3} t (\text{Vs})$$

$$\text{για } 0 \leq t \leq t_1$$

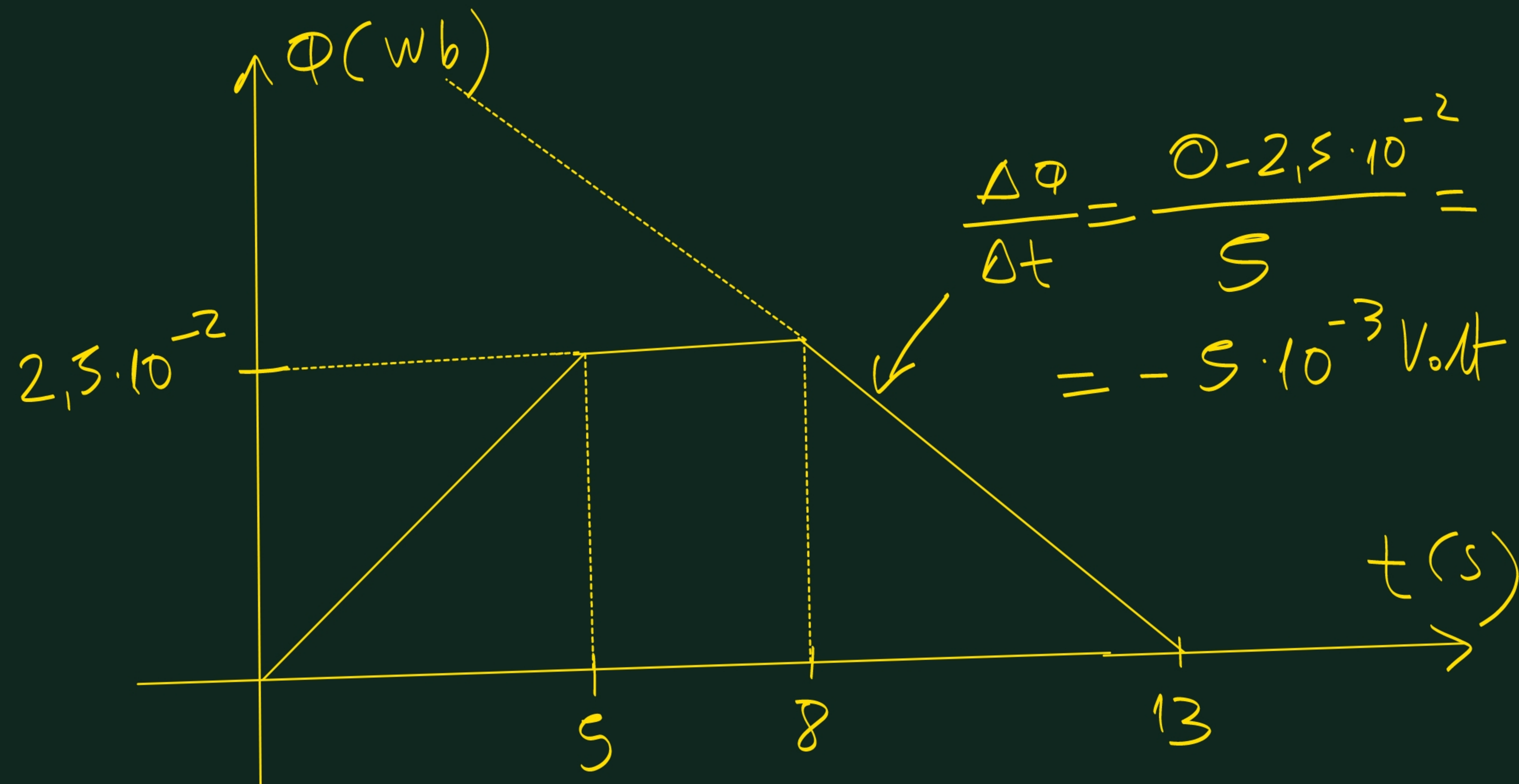


$$\begin{aligned} \Phi &= Bl^2 = 0,4 \cdot 0,25 \cdot 0,25 \\ &= 0,1 \cdot 0,25 = 0,025 = \\ &= 2,5 \cdot 10^{-2} \text{ Wb} \end{aligned}$$

$$\Phi = Blv(t_1 + t_2 + t_3 - t)$$

K aziz enveiros: $\Phi = 5 \cdot 10^{-3} t$

$t_1 = 5 \text{ sec}$ $\Phi(t_1) = 25 \cdot 10^{-3} = 2,5 \cdot 10^{-2} \text{ Wb.}$



$$\Phi(t) = Blv(t + t_1 + t_2 + t_3) =$$

$$= 0,4 \cdot 0,25 \cdot 0,05(-t + 13) =$$

$$= 0,1 \cdot 0,05(-t + 13) =$$

$$= 5 \cdot 10^{-3}(-t + 13) =$$

$$= -5 \cdot 10^{-3} t + 65 \cdot 10^{-3}$$

$$\Phi(0) = 65 \cdot 10^{-3}$$

$$\Phi(8) = 5 \cdot 10^{-3}(-8 + 13) =$$

$$= 25 \cdot 10^{-3} = 2,5 \cdot 10^{-2} \text{ Wb.}$$

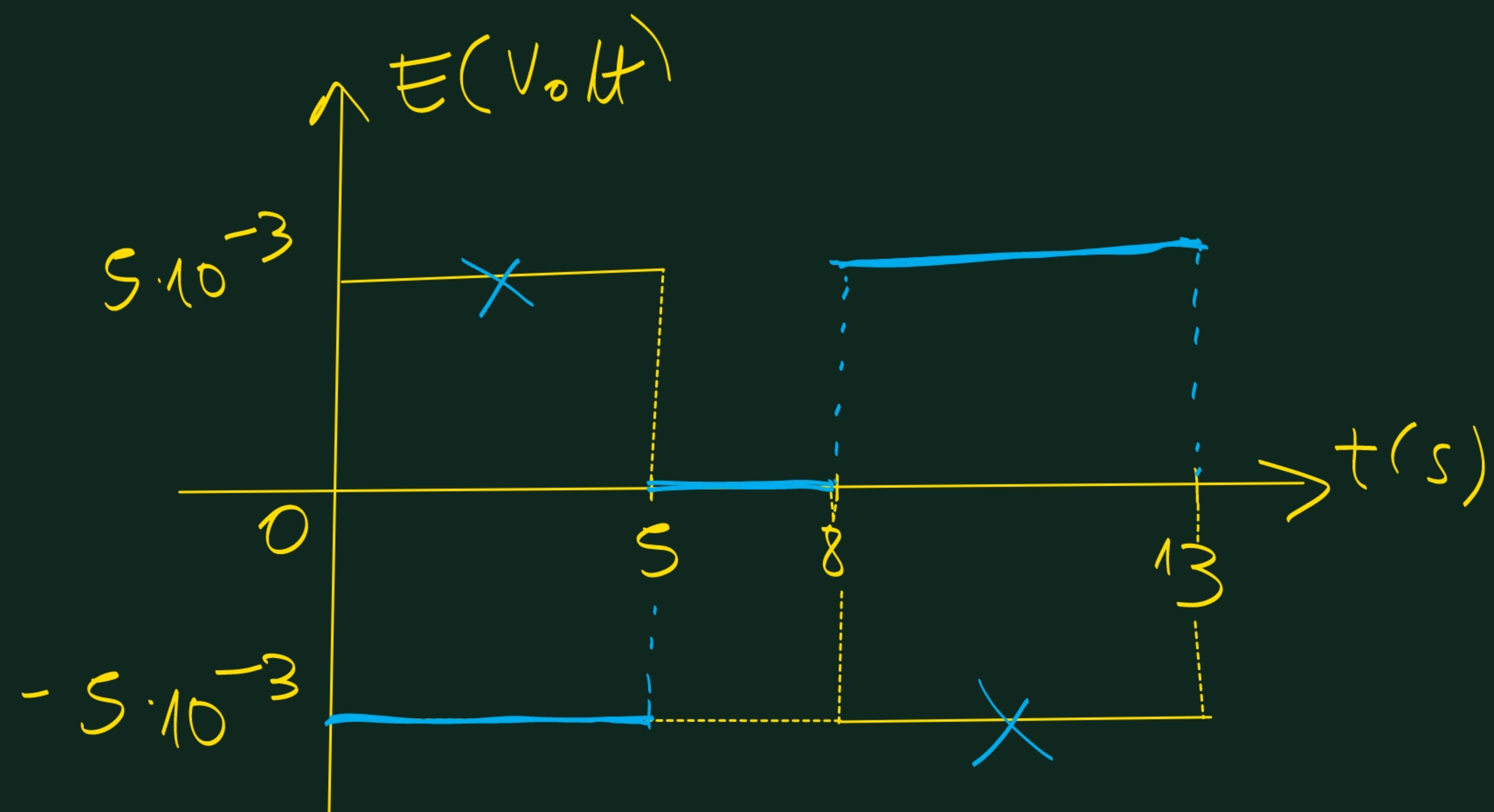
$$\Phi(t) = \begin{cases} 5 \cdot 10^{-3} t, & 0 \leq t \leq 5 \text{ sec} \\ 25 \cdot 10^{-3}, & 5 < t < 8 \text{ sec} \\ 5 \cdot 10^{-3} (13 - t), & 8 \leq t \leq 13 \text{ sec} \end{cases}$$

$$b) E = - \frac{\Delta \Phi}{\Delta t} = - \frac{5 \cdot 10^{-3} t - 0}{t - 0} = - 5 \cdot 10^{-3} \text{ Volt (E'isofot)}$$

$$E = - \frac{\Delta \Phi}{\Delta t} = - (-5 \cdot 10^{-3}) = 5 \cdot 10^{-3} \text{ Volt}$$

6) App:

$$E(t) = \begin{cases} -5 \cdot 10^{-3} \text{ Volt} & \text{für } 0 \leq t \leq 5 \\ 0 & \text{für } 5 < t < 8 \\ 5 \cdot 10^{-3} & \text{für } 8 \leq t \leq 13 \end{cases}$$



$$8) I = \frac{E \cdot \eta}{R}$$

