

Ασκ. 5.67

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

$$R^* = 1 \Omega / \text{m}$$

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

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

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

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

$$R = 1 \Omega$$

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

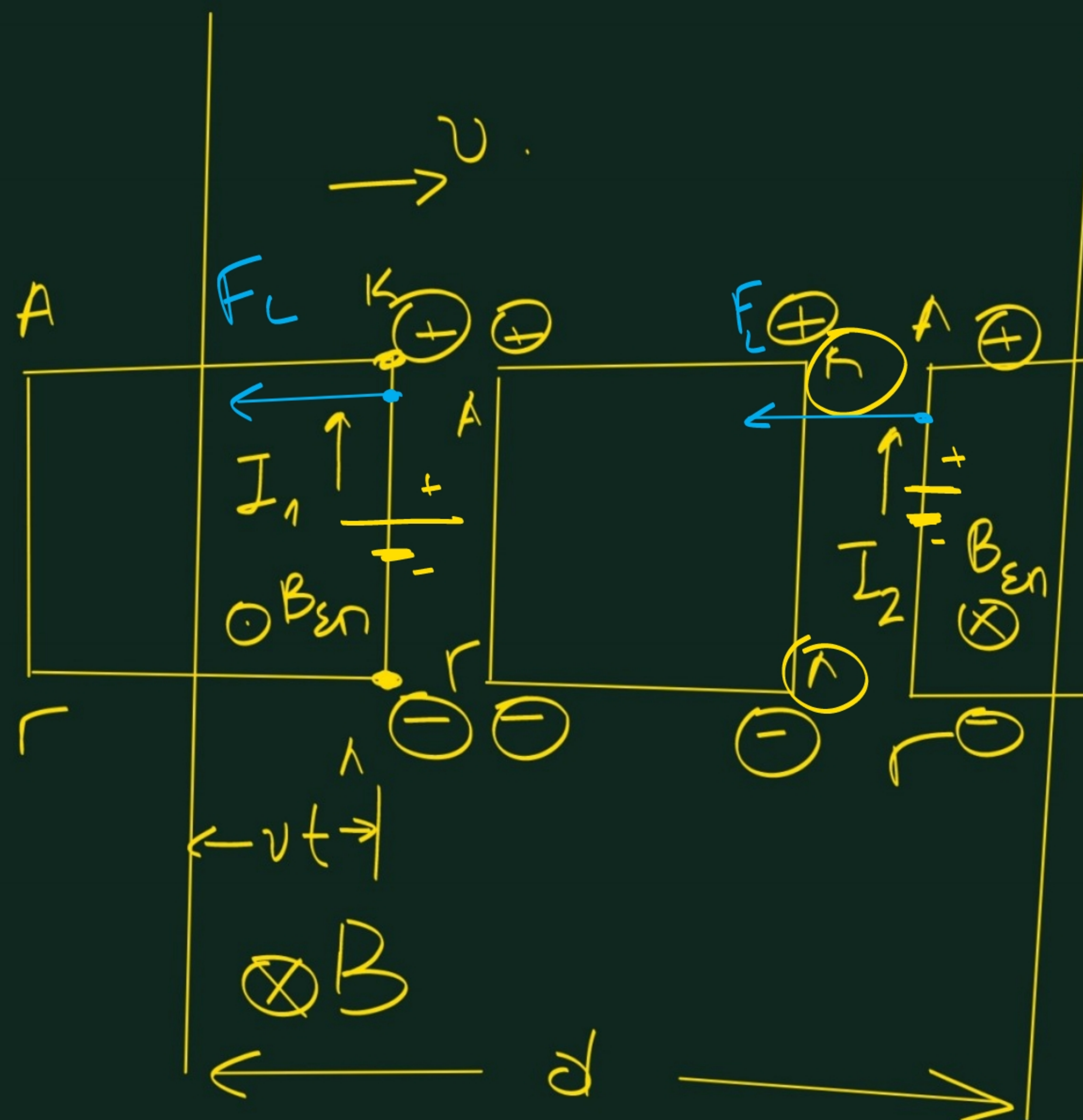
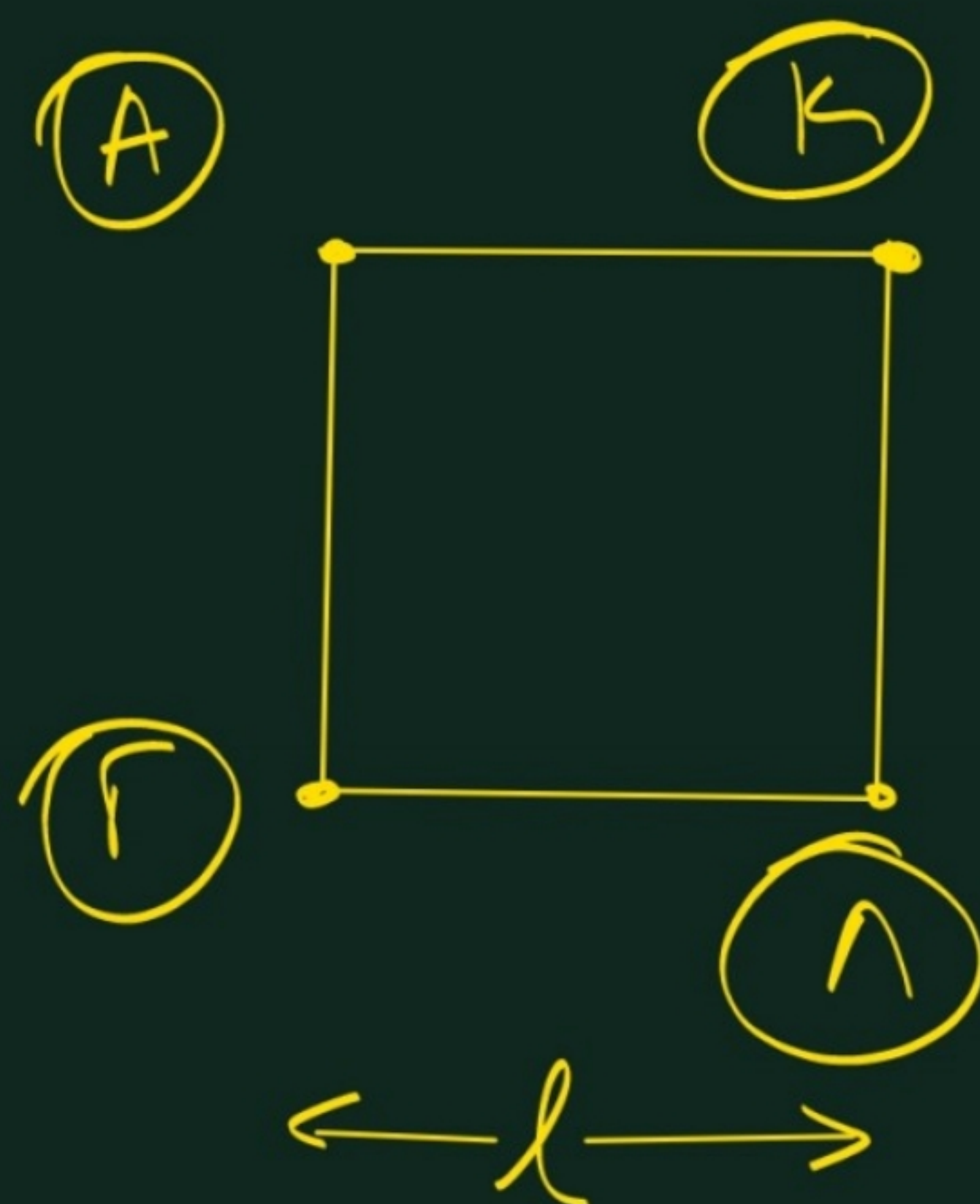
$$t_2 = \frac{d-l}{v} = \frac{0,15}{0,05} = 3 \text{ sec}$$

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

$t_1 = \text{χρόνος εισόδου}$

$t_2 = \text{χρόνος στο πεδίο}$

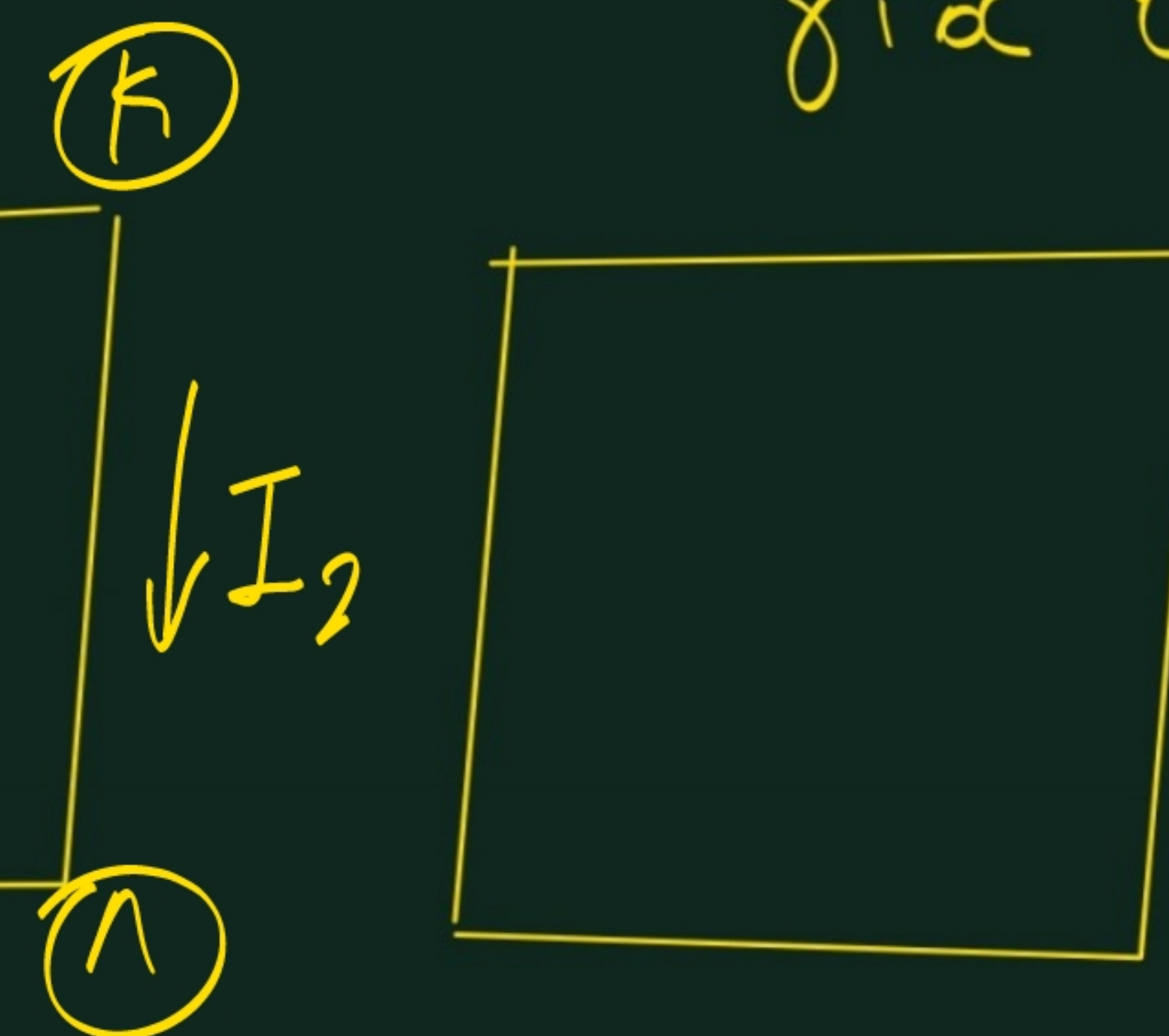
$t_3 = \text{χρόνος εξόδου}$



$$\Phi = B l v t = 0,4 \cdot 0,25 \cdot 0,05 t$$

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

$$\text{για } 0 \leq t \leq t_1$$



$$\Phi = B l^2 = 0,4 \cdot 0,25 \cdot 0,25$$

$$= 0,1 \cdot 0,25 = 0,025 =$$

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

$$\Phi = B l v (t_1 + t_2 + t_3 - t)$$

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

$$b) E = - \frac{\Delta \Phi}{\Delta t} = - \frac{5 \cdot 10^{-3} t - 0}{t - 0} = - 5 \cdot 10^{-3} \text{ Volt (Eisoso)}$$

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

5) Κατά την είσοδο:

$$V_K - V_A = |E_{\text{ση}}| - |I_1| \cdot R_{KA} \Rightarrow$$

$$V_{KA} = 5 \cdot 10^{-3} - 5 \cdot 10^{-3} \frac{R}{4} =$$

$$= 5 \cdot 10^{-3} \left(1 - \frac{1}{4}\right) =$$

$$= 5 \cdot 0,75 \cdot 10^{-3} \Rightarrow$$

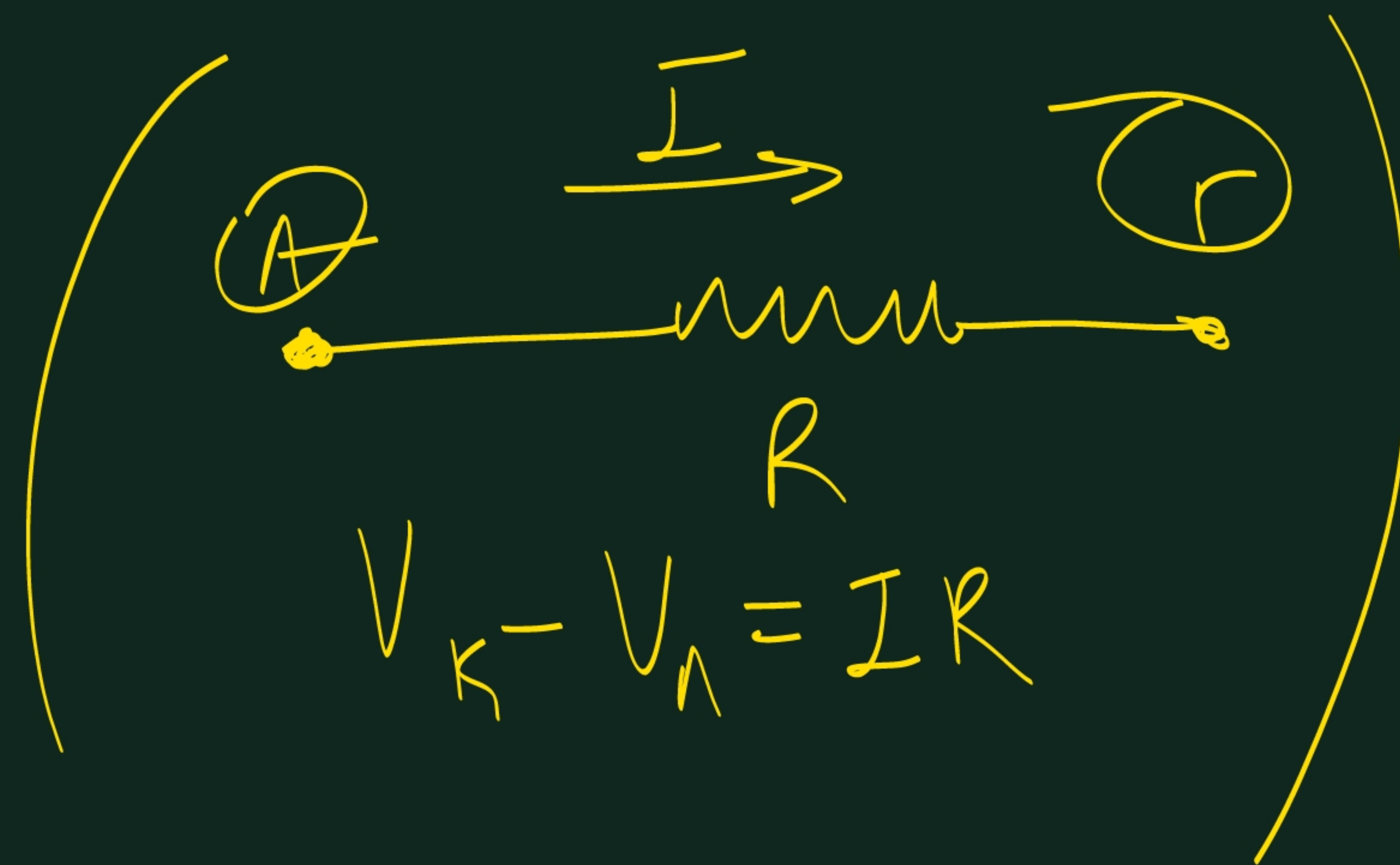
$$V_{KA} = 3,75 \cdot 10^{-3} \text{ Volt (κατά την είσοδο)}$$

Κατά την έξοδο:

$$V_K - V_A = I_2 \cdot R_{KA} \Rightarrow$$

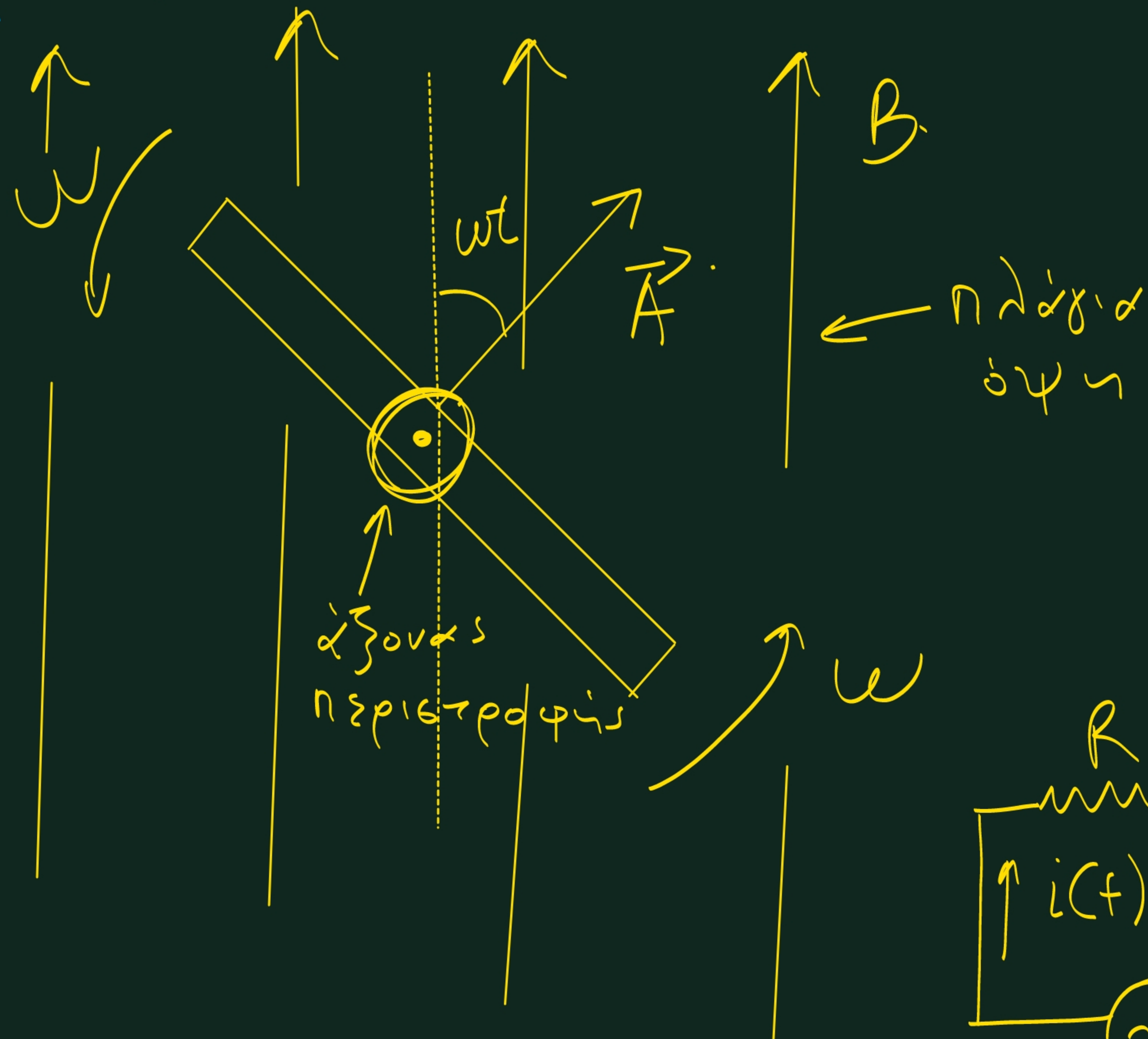
$$V_{KA} = 5 \cdot 10^{-3} \cdot \frac{1}{4} \Rightarrow$$

$$V_{KA} = 1,25 \cdot 10^{-3} \text{ Volt.}$$



Εν $\propto \lambda \lambda \propto \omega \omega \propto \nu \nu$:

$$\Phi = NBA \sin \omega t$$



$$E_{\text{em}} = - \frac{d\Phi}{dt} = - \frac{d}{dt} (NBA \sin \omega t) =$$

$$= - NBA \frac{d}{dt} (\sin \omega t)$$

$$= - NBA \cdot (-\omega \cos \omega t) =$$

$$E_{\text{em}} = NBA \omega \cos \omega t$$

$$\hat{V}(t) = V \cos \omega t$$

↑
Μέγιστος αναλλαξασσόμενος
(peak to peak)

