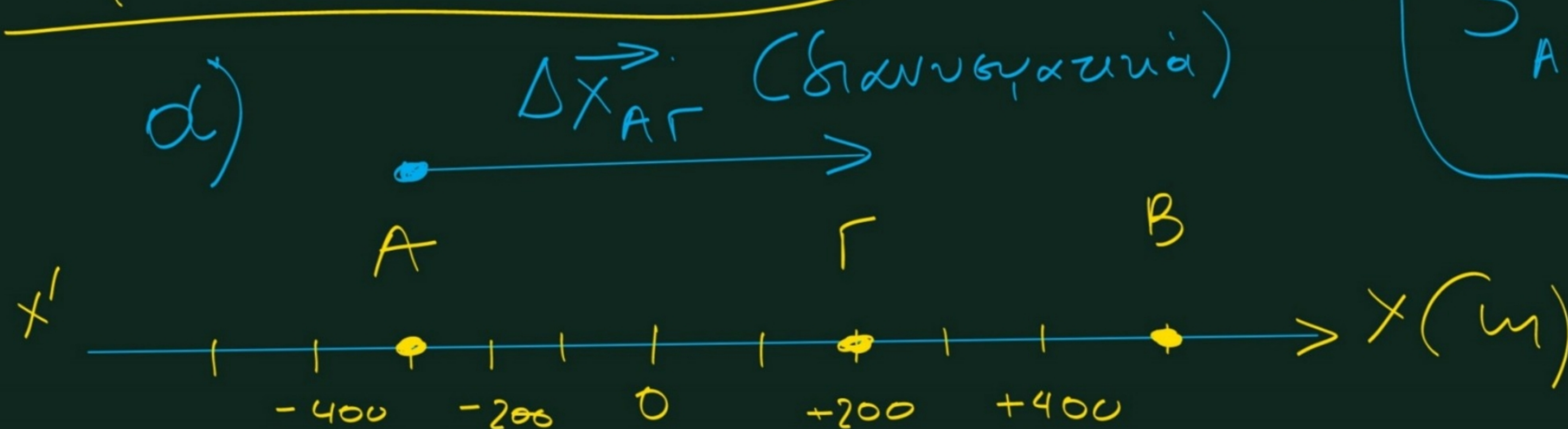


Ερ. 2.31 (Φυλλοδίο)



$$x_A = -300 \text{ m}$$

$$x_B = +500 \text{ m}$$

$$x_\Gamma = +200 \text{ m}$$

$$A \rightarrow B \rightarrow \Gamma$$

$$\Delta x_{A\Gamma} = x_\Gamma - x_A =$$

$$= +200 - (-300) =$$

$$\Delta x_{A\Gamma} = +500 \text{ m (αλγεβρική τιμή)}$$

β) Συνολικό διάστημα:

$$S_{AB\Gamma} = |\Delta x_{AB}| + |\Delta x_{B\Gamma}| =$$

$$= |x_B - x_A| + |x_\Gamma - x_B|$$

$$= |500 - (-300)| + |200 - 500|$$

$$= |800| + |-300| =$$

$$= 800 + 300 = 1100 \text{ m}$$

γ) $v_{\text{μέση}} = \frac{\text{ολικό διάστημα}}{\text{ολικός χρόνος}}$

$$v = \frac{S_{AB\Gamma}}{\Delta t_{AB\Gamma}} = \frac{1100}{10} = 110 \text{ m/s}$$

Ταχύτητες

$$v = \frac{\Delta x}{\Delta t} \quad \text{μέση αλγεβρική}$$

$$\vec{v} = \frac{\Delta \vec{x}}{\Delta t} \quad \text{μέση διανυσματική}$$

$$v_{\mu} = \frac{s_{o\lambda}}{t_{o\lambda}} \quad \text{μέση}$$

$$v = \frac{\Delta x}{\Delta t} \Rightarrow \frac{v}{1} \cancel{\cdot} \frac{\Delta x}{\Delta t} \Rightarrow$$

$$\Delta x = v \cdot \Delta t$$

$$\text{Αλλά: } \Delta x = x - x_0$$

$$\text{και } \Delta t = t - t_0$$

$$x_0 = \text{αρχική θέση}$$

$$t_0 = \text{αρχικός χρόνος (συνήθως μηδέν)}$$

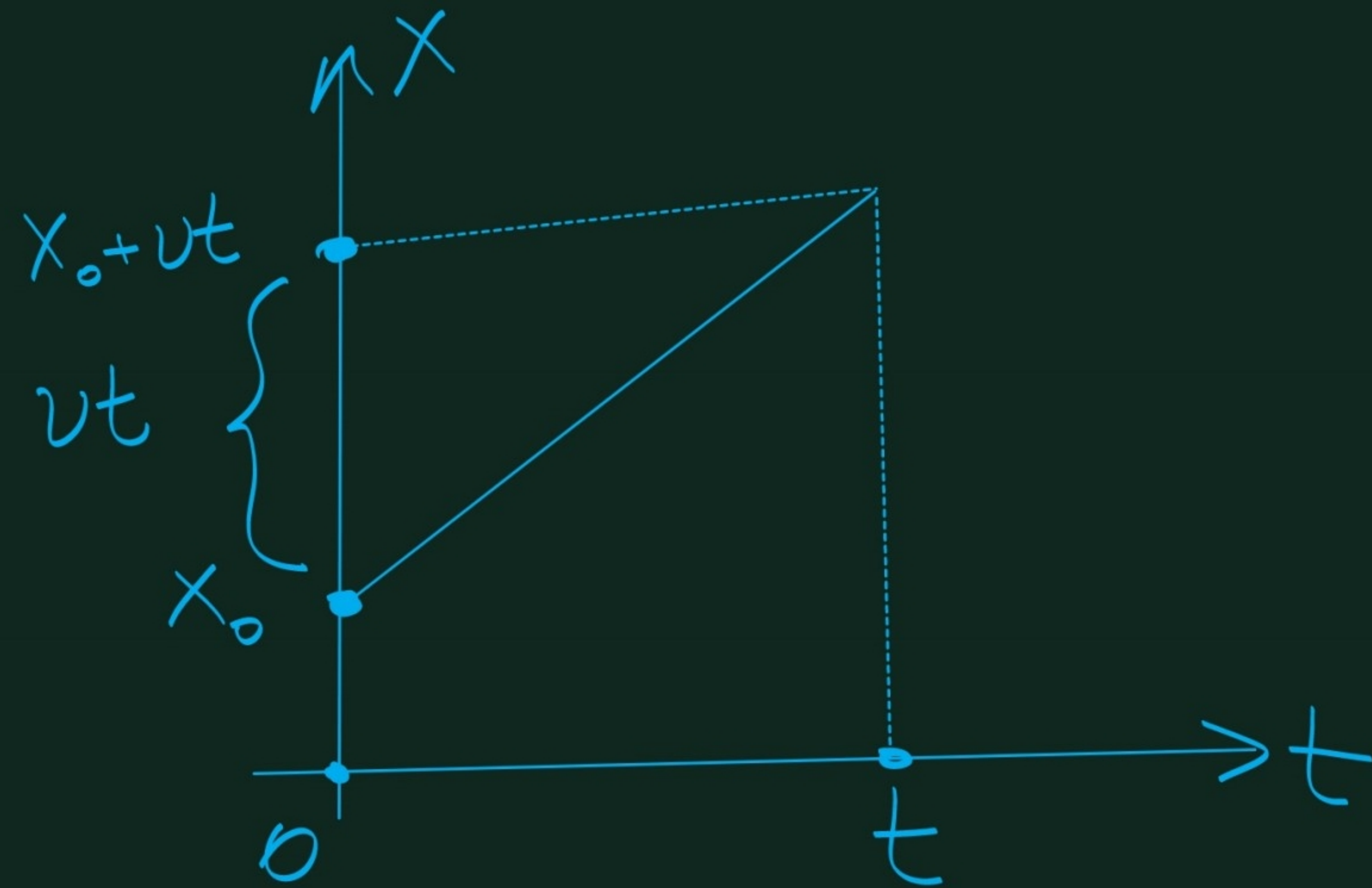
$$\text{Αρα αν } t_0 = 0 \text{ έχουμε: } x - x_0 = v \cdot t \Rightarrow$$

$$\boxed{x = x_0 + vt} \quad \text{Εξίσωση θέσης}$$

$$\text{Αν } x_0 = 0 \text{ έχουμε: } x = vt$$

Διάγραμμα $x-t$

$$x = x_0 + vt$$

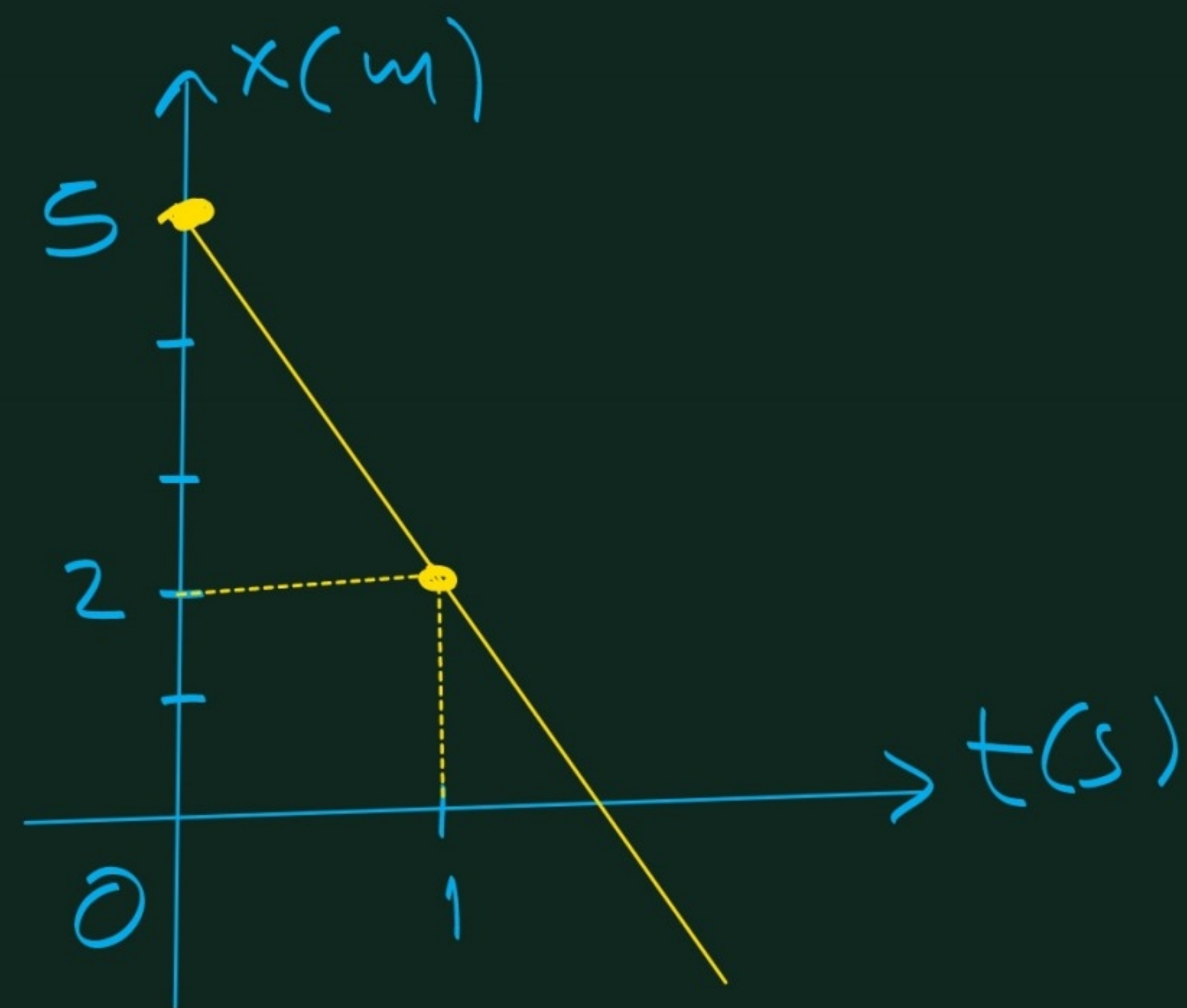


Π.χ. $x = 5 - 3t$

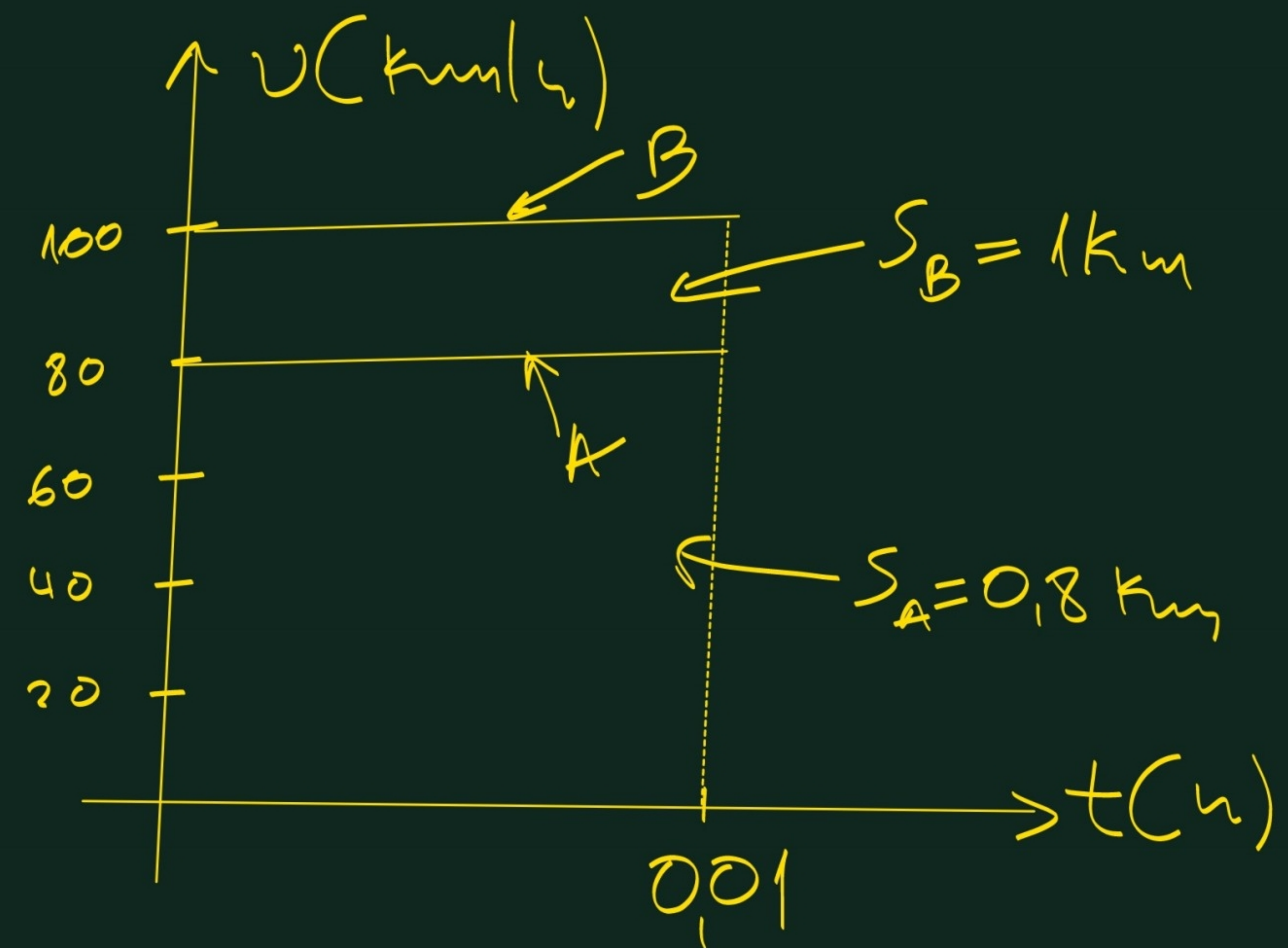
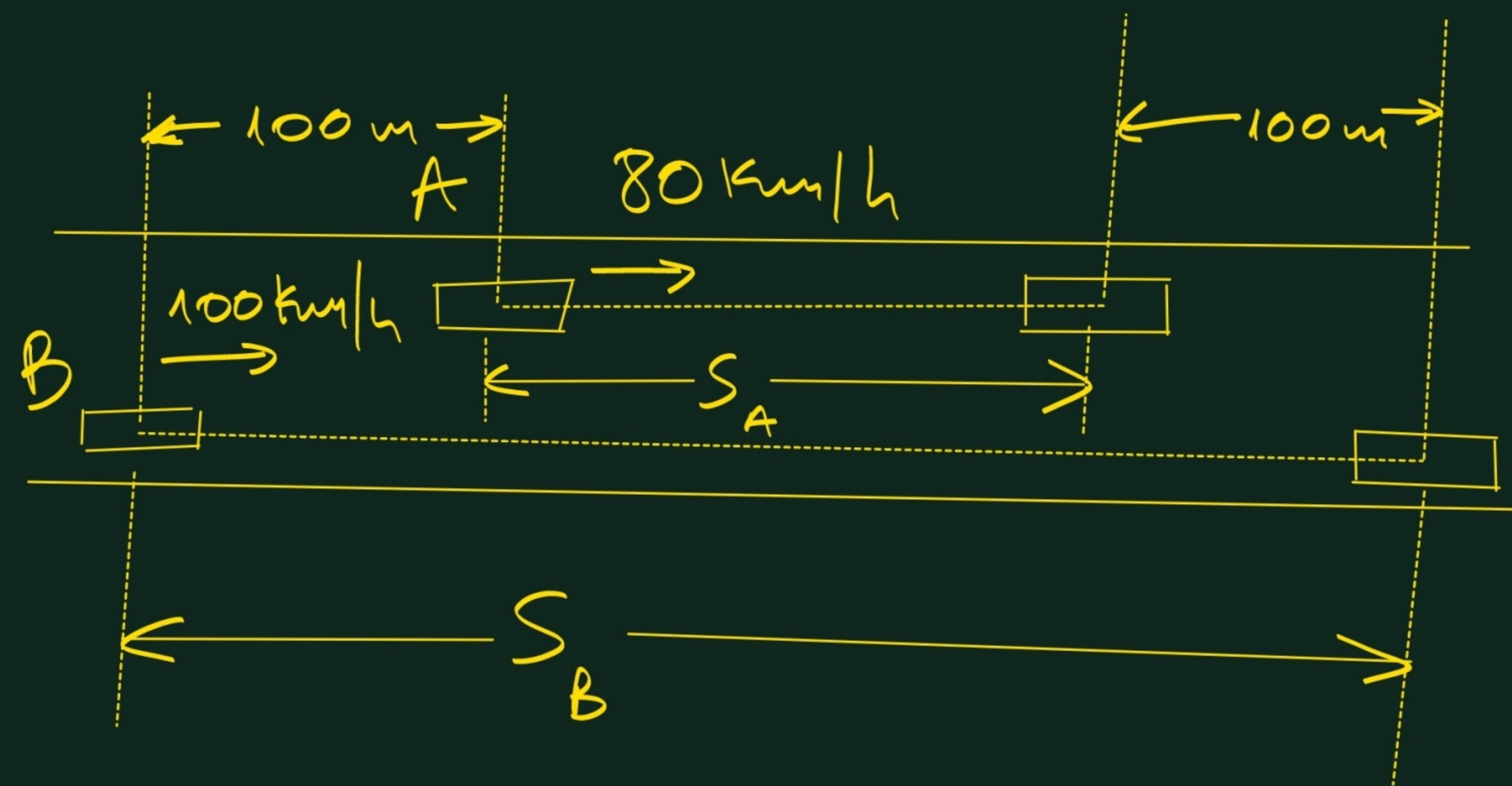
x	t
5	0
2	1

$$x_0 = 5 \text{ m}$$

$$v = -3 \text{ m/s}$$



Εφαρμογή βελ. 46.



$$S_B - S_A = 200 \text{ m} \Rightarrow$$

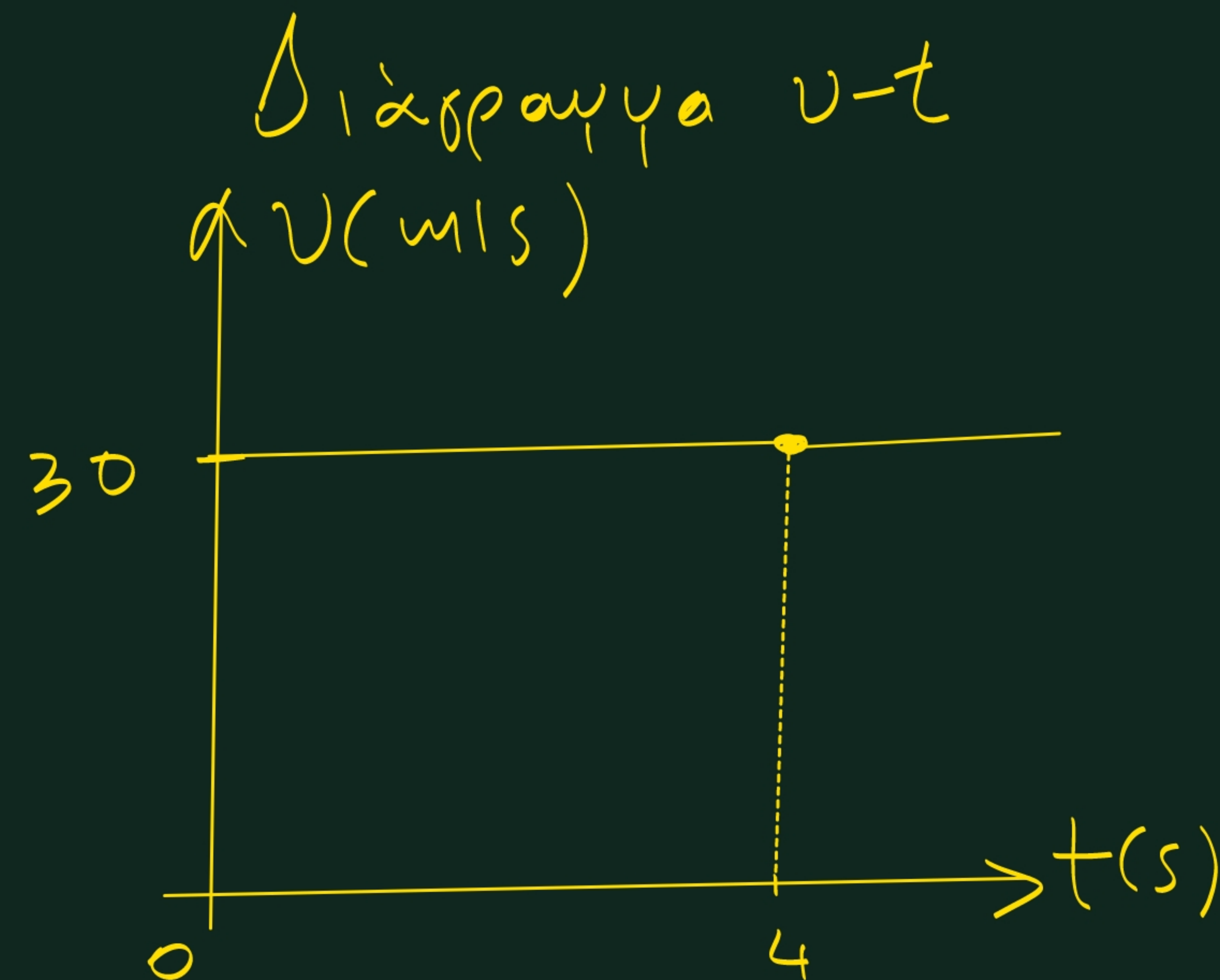
$$v_B t - v_A t = 0.2 \text{ km} \Rightarrow$$

$$100t - 80t = 0.2 \Rightarrow 20t = 0.2 \Rightarrow t = 0.01 \text{ h} \text{ i } t = 0.01 \cdot 3600 = 36 \text{ sec}$$

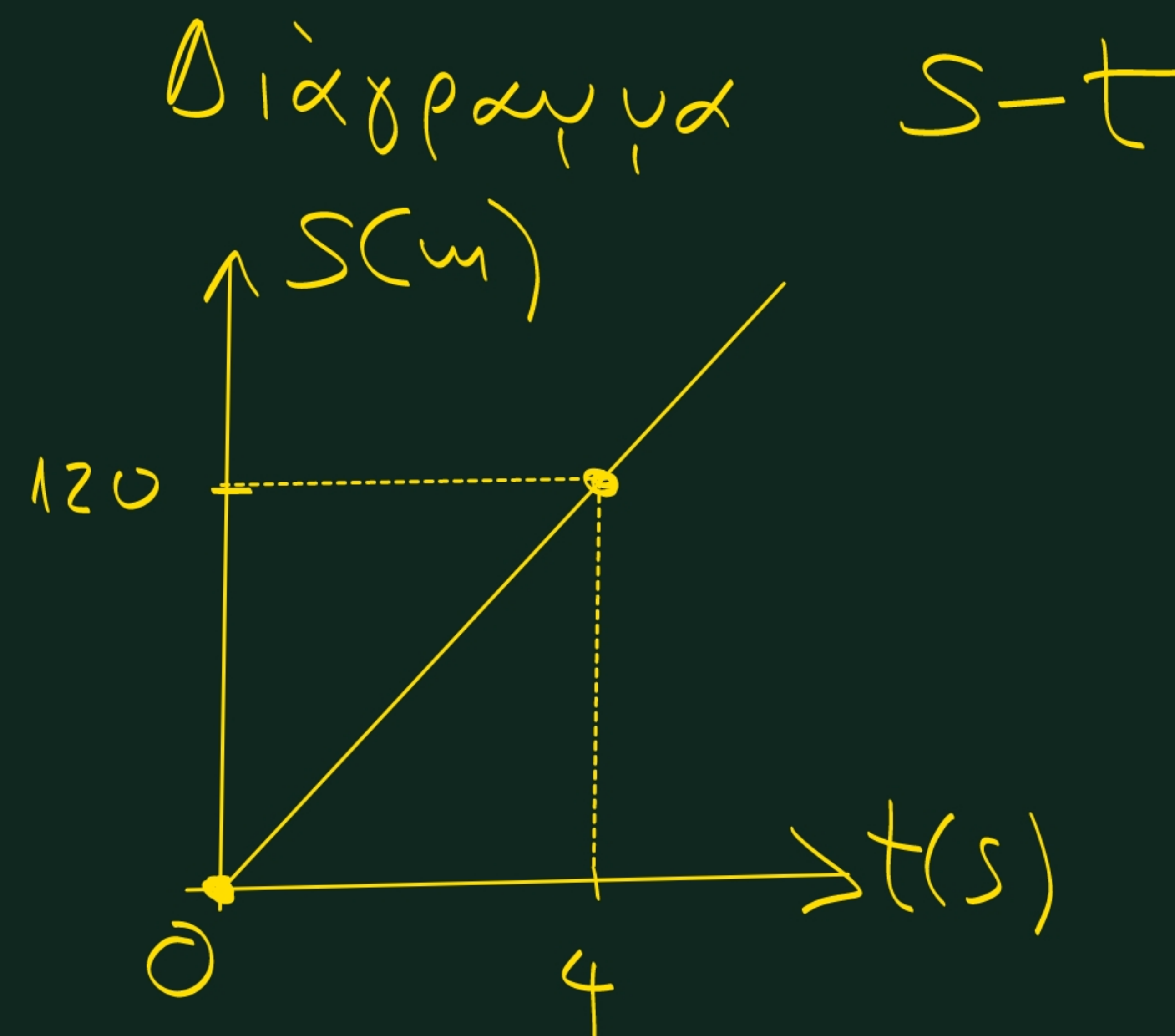
Ασκ. 1 εξ. 69.

$$v = \frac{s}{t} = \frac{120}{4} = 30 \text{ m/s}.$$

$$\left(\begin{array}{l} v = \frac{\Delta x}{\Delta t} = \frac{x}{t} \\ \Delta x = x - x_0 \\ \Delta t = t - t_0 \\ \text{Αν } x_0 = 0 \\ \text{και } t_0 = 0 \end{array} \right) \Rightarrow x = v \cdot t$$



$$s = v \cdot t \Rightarrow s = 30t \text{ (SI)}$$



Ex. 3.74) (Qu. 22.)

$$x = 12 - t \quad (\text{SI})$$

$$x = x_0 + v \cdot t$$

Appl: $x_0 = 12 \text{ m}$

and $v = -1 \text{ m/s}$.