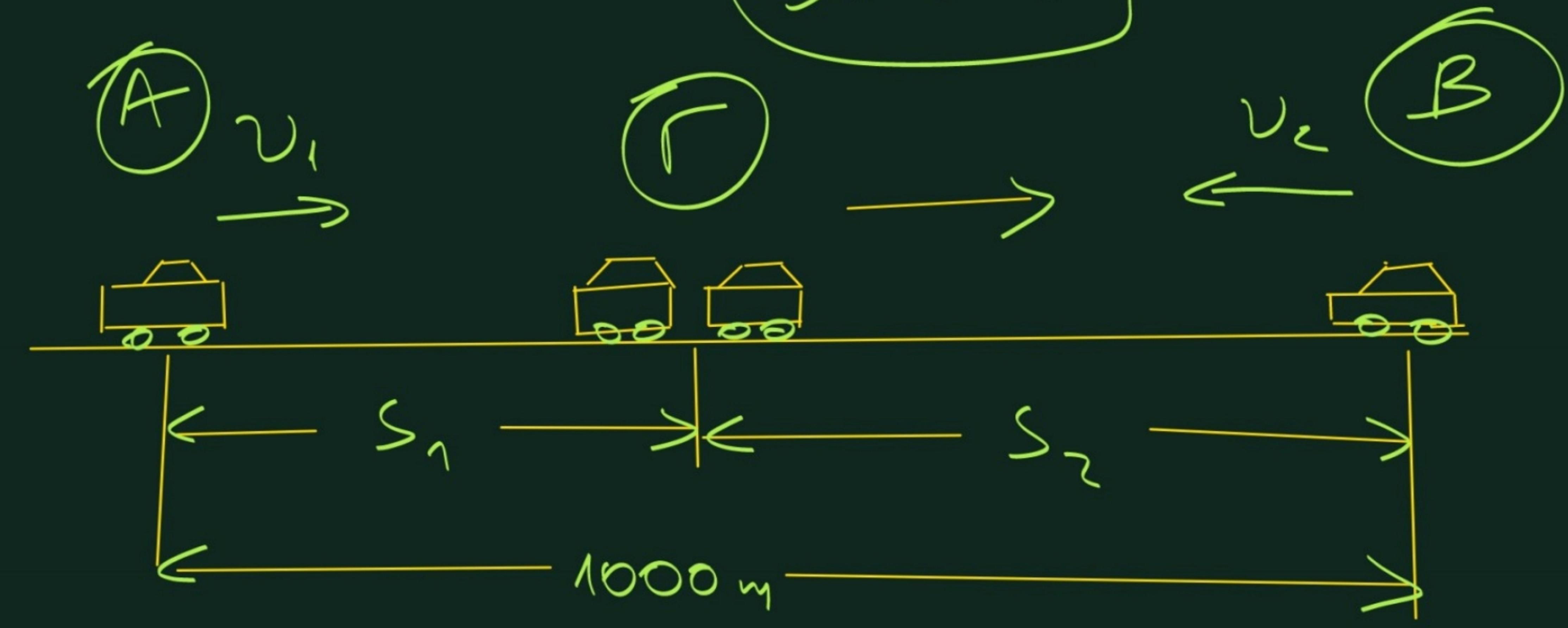


A 6u. 4 6ελ. 69

$$v = \frac{s}{t} \quad t = \frac{s}{v}$$

$$s = v \cdot t$$



$$v_1 = 36 \text{ km/h} = \frac{36 \cdot 1000}{3600} \text{ m/s} = 10 \text{ m/s}$$

$$v_2 = 54 \text{ km/h} = \frac{54 \cdot 1000}{3600} = 15 \text{ m/s}$$

A. Από το σχήμα βρίσκουμε ότι:

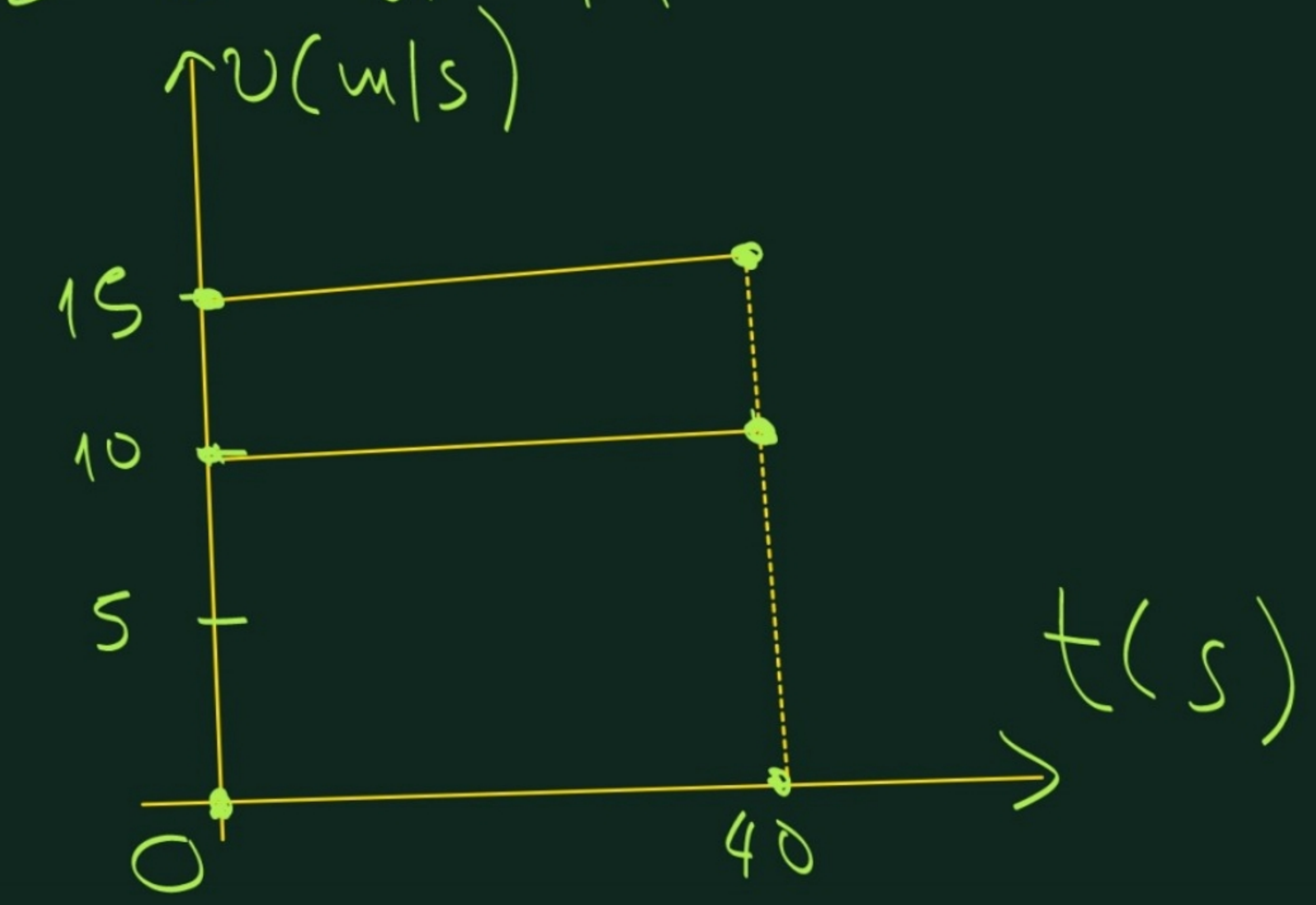
$$s_1 + s_2 = 1000 \Rightarrow$$

$$v_1 \cdot t + v_2 \cdot t = 1000 \Rightarrow$$

$$10t + 15t = 1000 \Rightarrow$$

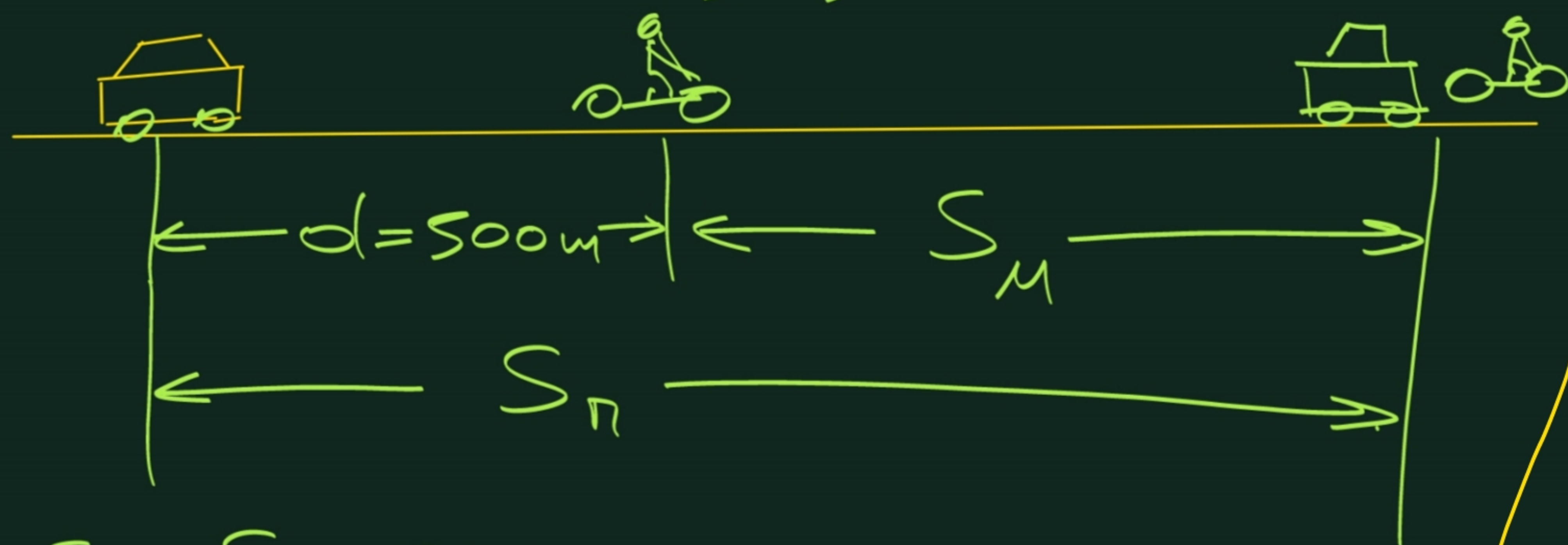
$$\frac{25t}{25} = \frac{1000}{25} \Rightarrow t = 40 \text{ sec}$$

B. Διάγραμμα v-t (νατὰ γέτρο)



Абау 5 баг. 69

A) $x(0) = 0$ $x_M(0) = +500 \text{ m}$
 v_n v_M $(+)$

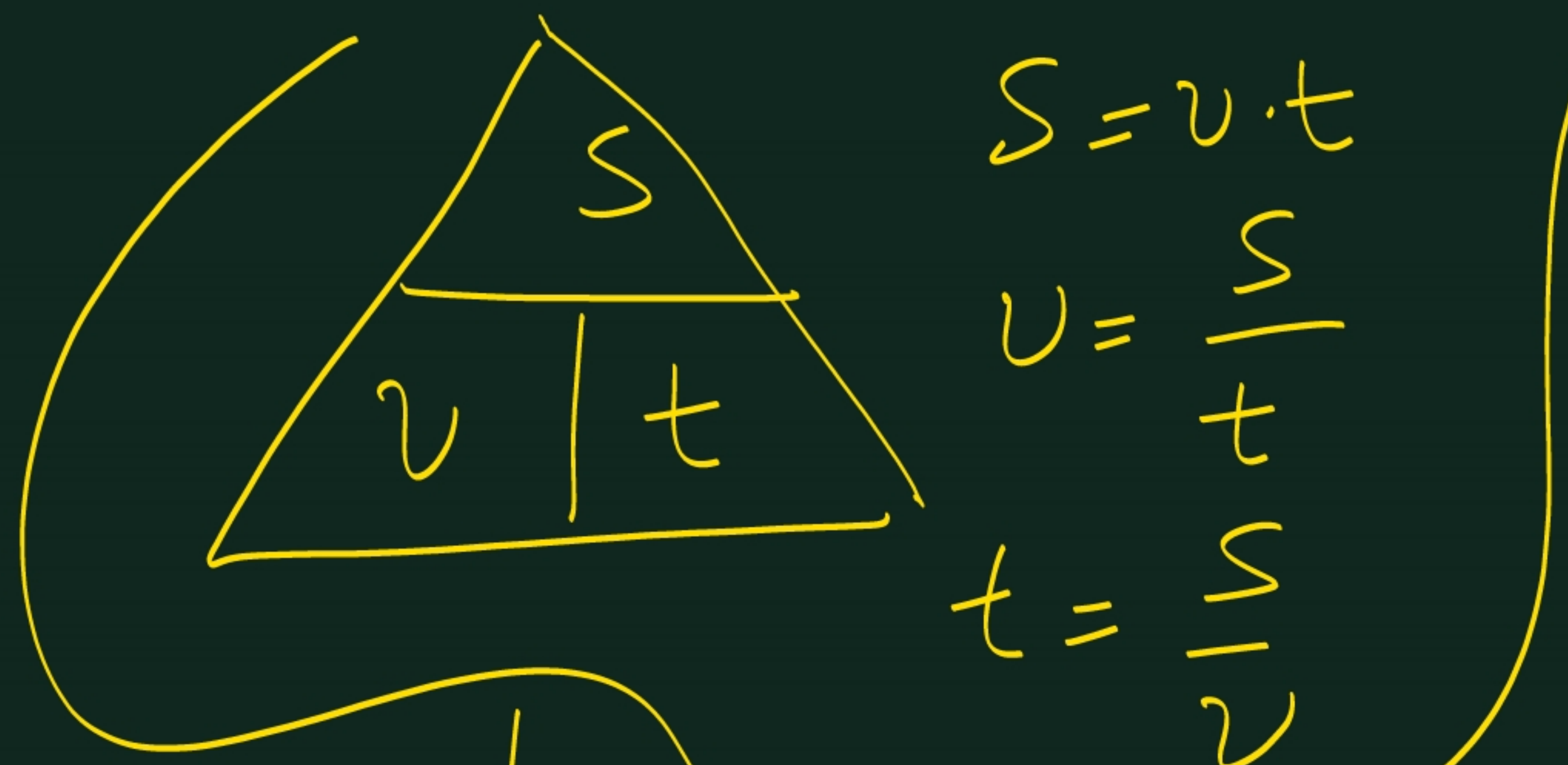


$$S_n - S_M = 500 \Rightarrow$$

$$v_n \cdot t - v_M \cdot t = 500 \Rightarrow$$

$$30 \cdot t - 20 \cdot t = 500 \Rightarrow$$

$$\frac{10t}{10} = \frac{500}{10} \Rightarrow t = 50 \text{ sec.}$$



B) $S_n = v_n \cdot t \Rightarrow$

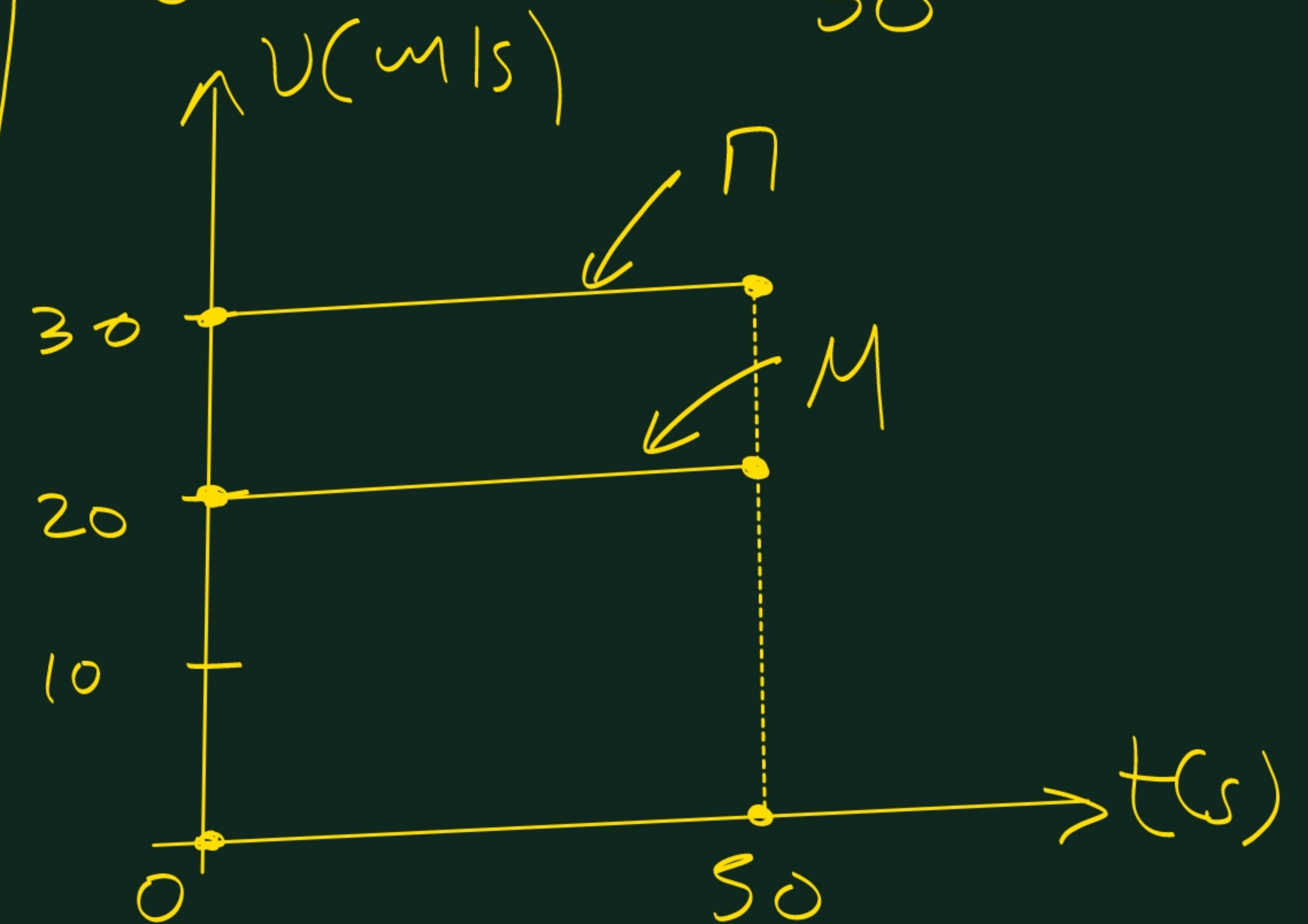
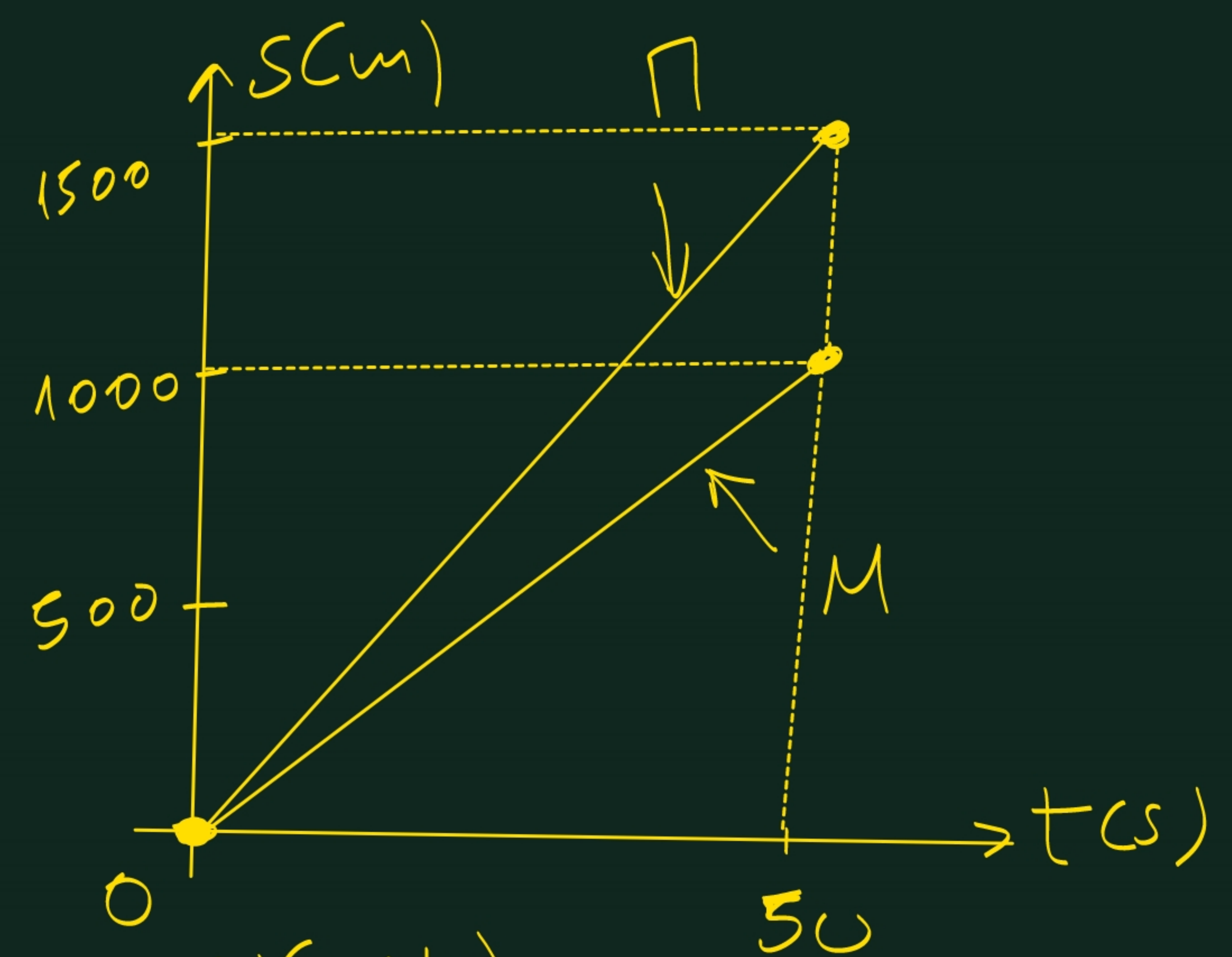
$$S_n = 30 \cdot 50 \Rightarrow$$

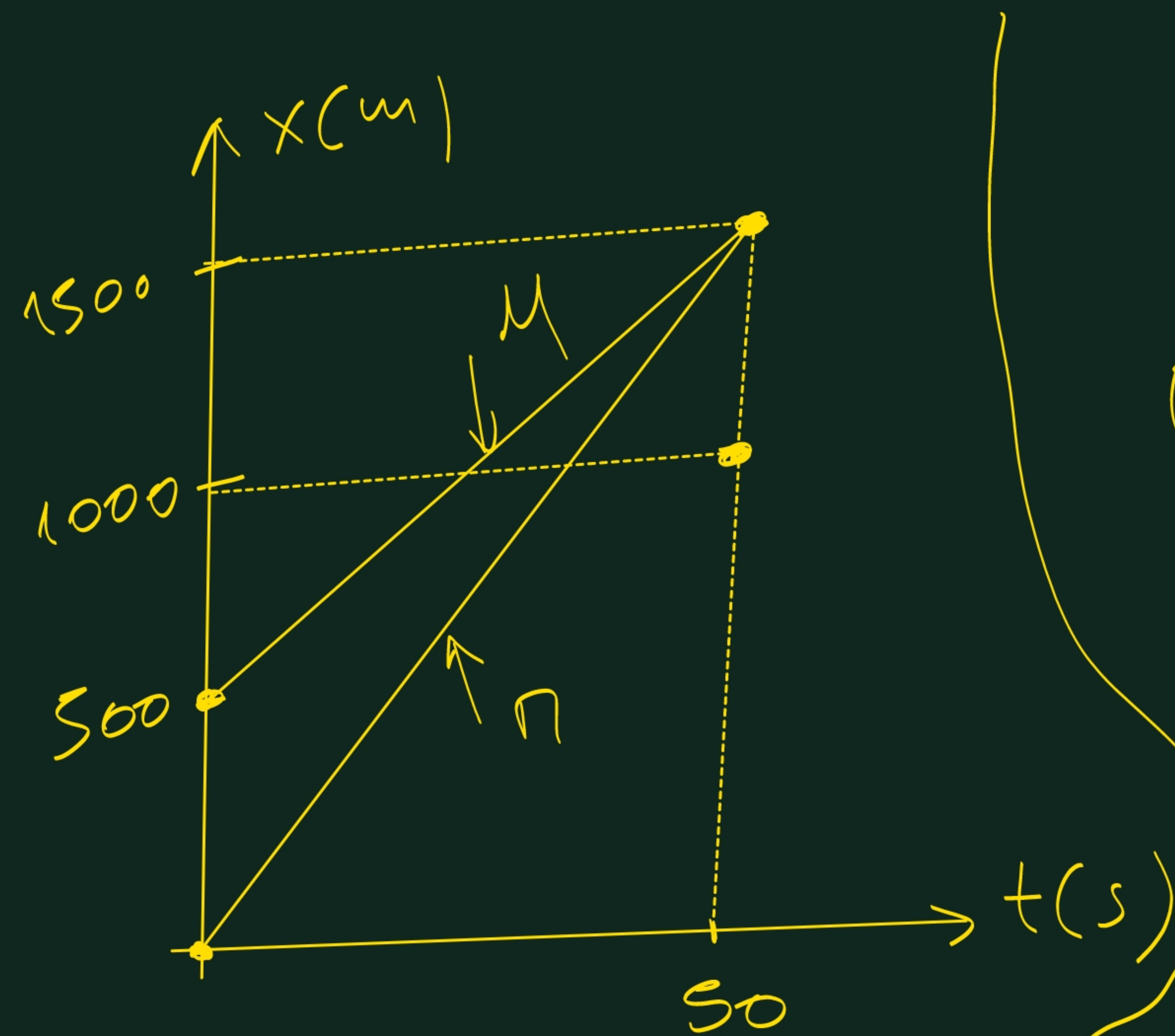
$$S_n = 1500 \text{ m}$$

$$S_M = v_M \cdot t \Rightarrow$$

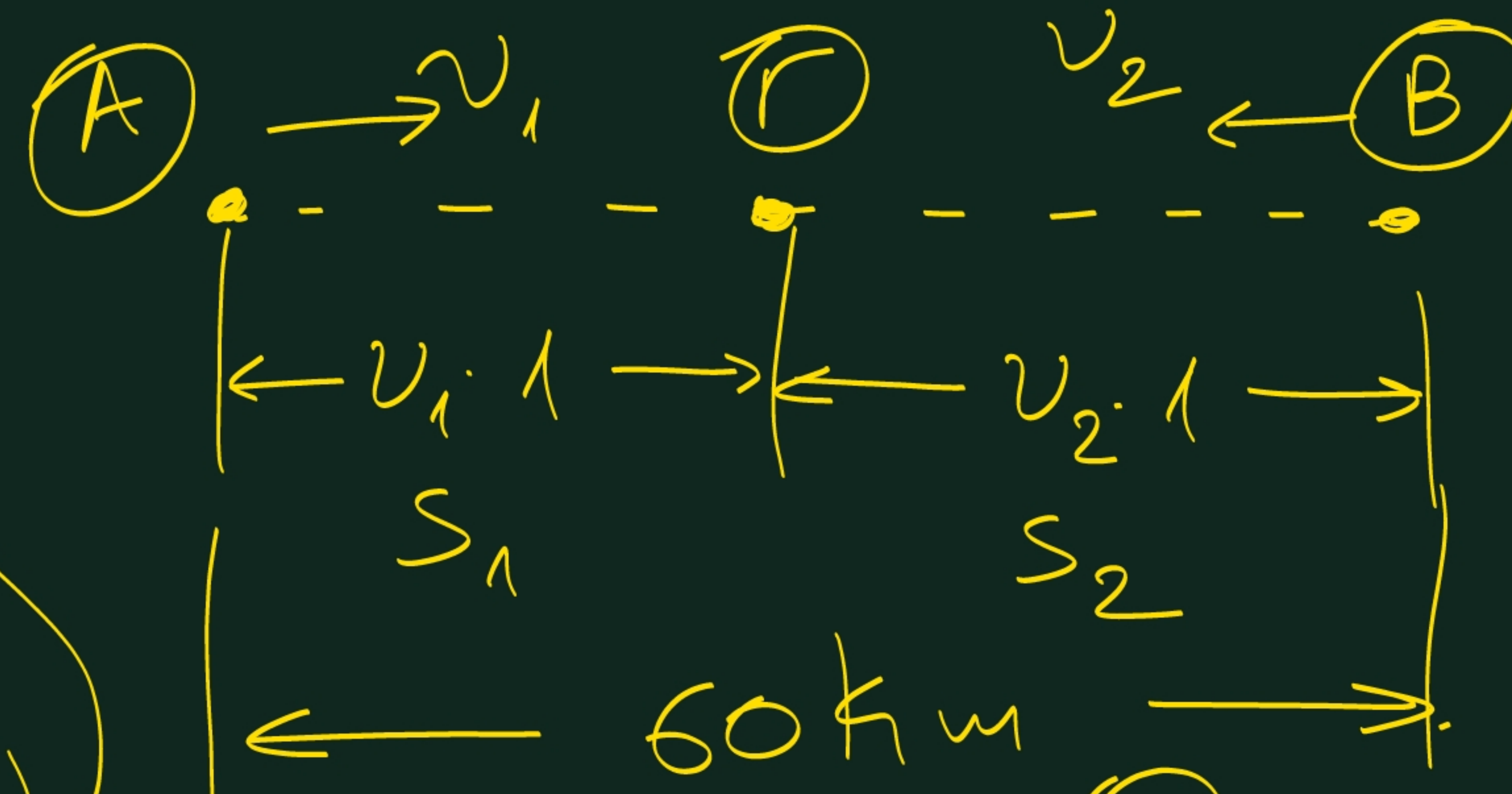
$$S_M = 20 \cdot 50 \Rightarrow$$

$$S_M = 1000 \text{ m}$$





Άσκ 3.44 (Ποδυλάκης)



Συναντούν στο Γ ύστερ
από 1 h άρα:

$$S_1 + S_2 = 60 \Rightarrow v_1 \cdot 1 + v_2 \cdot 1 = 60 \Rightarrow$$

$$v_1 + v_2 = 60 \Rightarrow v_2 = 60 - v_1$$

$$t_1 = \frac{60}{v_1} \quad t_2 = \frac{60}{v_2}$$

$$40 \cdot v_1 = 40(60 - v_1) + (60 - v_1) \cdot v_1 \Rightarrow$$

$$40v_1 = 2400 - 40v_1 + 60v_1 - v_1^2 \Rightarrow$$

$$v_1^2 + 20v_1 - 2400 = 0$$

$$v_1 = \frac{-20 \pm \sqrt{10.000}}{2} = \frac{-20 + 100}{2} = 40 \text{ km/h}$$

$$\text{ου } v_2 = 20 \text{ km/h}$$

$$t_2 = t_1 + 1,5 \Rightarrow$$

$$\frac{60}{v_2} = \frac{60}{v_1} + 1,5 \Rightarrow$$

$$\frac{120}{v_2} = \frac{120}{v_1} + 3 \Rightarrow$$

$$\frac{40}{v_2} = \frac{40}{v_1} + 1 \Rightarrow$$

$$\frac{40}{60 - v_1} = \frac{40}{v_1} + 1 \Rightarrow$$

$$\Delta = b^2 - 4\alpha\gamma = 20^2 - 4 \cdot (-2400) = 400 + 9600 = 10.000$$