

Abu. 17 6e2.71

$$v_0 = 10 \text{ m/s.}$$

$$a = 2 \text{ m/s}^2$$

$$A. v = v_0 - a \cdot t \Rightarrow$$

$$5 = 10 - 2 \cdot t_1 \Rightarrow$$

$$2t_1 = 5 \Rightarrow t_1 = 2,5 \text{ sec}$$

$$S = v_0 \cdot t - \frac{1}{2} a \cdot t^2 \Rightarrow$$

$$S = 10 \cdot 2,5 - \frac{1}{2} \cdot 2 \cdot 2,5^2 \Rightarrow S = 25 - 6,25 \Rightarrow S = 18,75 \text{ m}$$

$$B. v = v_0 - a \cdot t \Rightarrow$$

$$0 = 10 - 2 \cdot t_2 \Rightarrow$$

$$2t_2 = 10 \Rightarrow t_2 = 5 \text{ sec}$$

$$S = v_0 \cdot t - \frac{1}{2} a \cdot t^2 \Rightarrow$$

$$S_2 = 10 \cdot 5 - \frac{1}{2} \cdot 2 \cdot 5^2 \Rightarrow$$

$$S_2 = 50 - 25 \Rightarrow S_2 = 25 \text{ m}$$



A ου. 15 βελ. 70.

A.  $x_1 = 10t \text{ (SI)}$

$$x_2 = 4t^2 \text{ (SI)}$$

$$x_1 = 10t$$

$$x = x_0 + vt \Rightarrow$$

$$x = vt$$

Αρα το (1) κινείται  
εξ ο. ομαλά με  $v = 10 \text{ m/s}$ .

$$x_2 = 4t^2$$

$$x = \frac{1}{2}at^2$$

$$\frac{1}{2}a = 4 \Rightarrow a = 8 \text{ m/s}^2$$

Αρα το (2) κινείται  
εξ ο. ομαλά με  $a = 8 \text{ m/s}^2$

Όταν συναντηθούν 16 φορές:

$$x_1 = x_2 \Rightarrow 10t = 4t^2 \Rightarrow$$

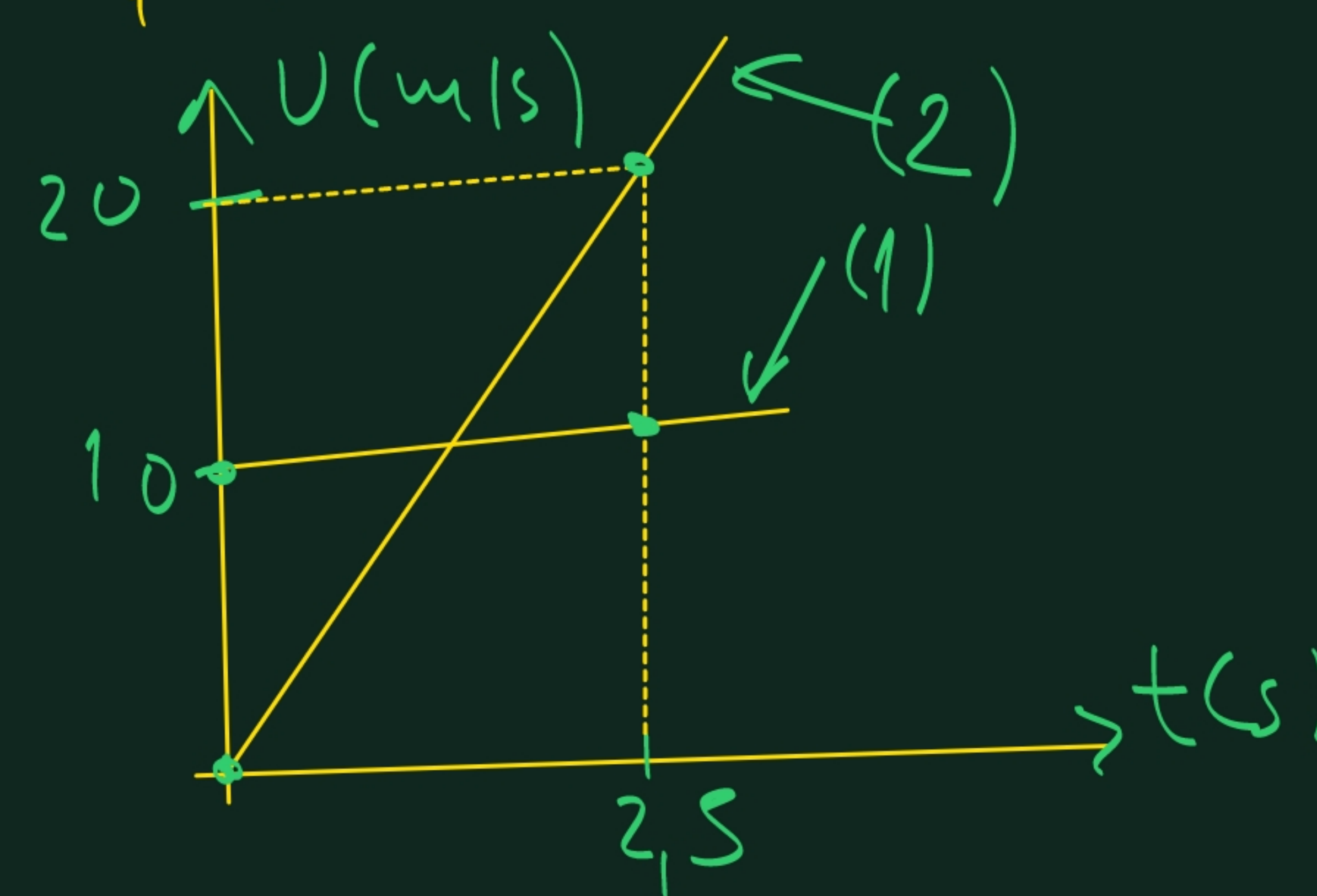
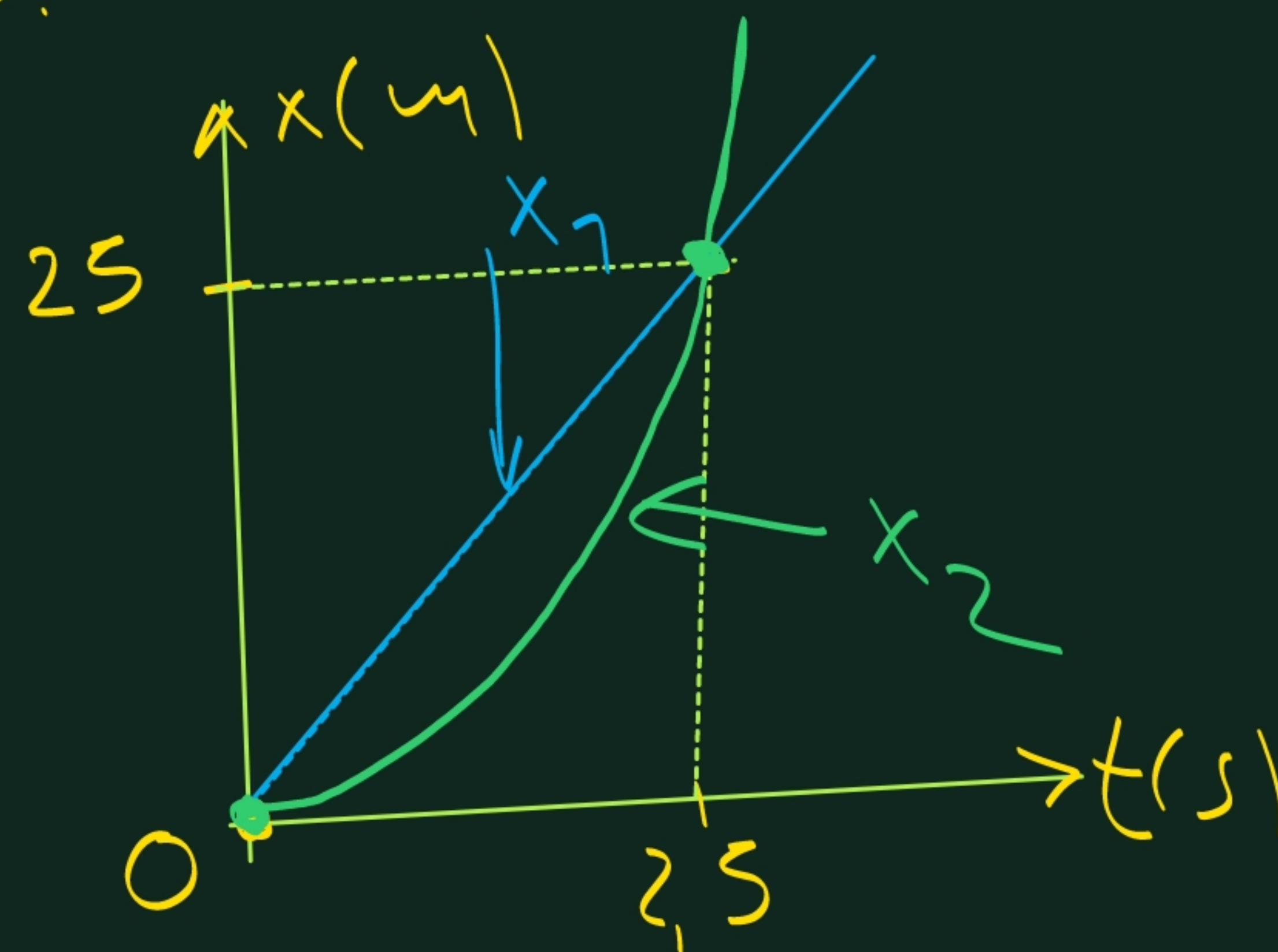
$$4t^2 - 10t = 0 \Rightarrow 2t(2t - 5) = 0 \Rightarrow$$

$$t = 0$$

$$\text{ή } 2t - 5 = 0 \Rightarrow \boxed{t = 2,5 \text{ sec}}$$

Αρα συναντώνται τη χρονική στιγμή  
 $2,5 \text{ sec}$ .

B. Για  $t = 2,5 \text{ sec}$  έχουμε:  $x_1 = 10 \cdot 2,5 = 25 \text{ m} = x_2$



$$\begin{aligned} v &= at = \\ &= 8 \cdot 2,5 = \\ &= 20 \text{ m/s} \end{aligned}$$