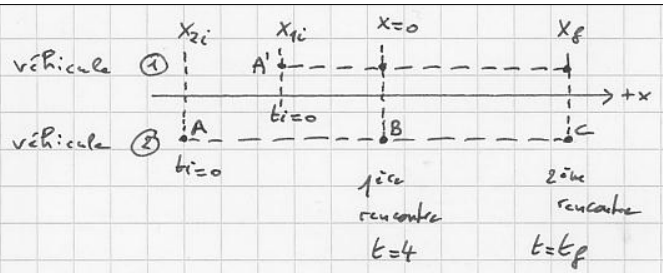
(2.27)



A : départ ② } positions en $t_i = 0$!
A' : départ ① } enclenchement chrono !

B : 1ère rencontre

C : 2ème rencontre

$$\begin{cases} \Delta x_2 = v \cdot t_f = x_f - x_{2i} \\ \Delta x_1 = 3 t_f^2 = x_f - x_{1i} \end{cases} + \begin{cases} x_{2i} = -v \cdot t = -70 \cdot 4 = -280 \\ x_{1i} = -\frac{1}{2} a t^2 = -3 \cdot 16 = -48 \end{cases} \Rightarrow \begin{cases} x_f + 280 = 70 t_f \\ x_f + 48 = 3 t_f^2 \end{cases}$$

$$\Rightarrow \begin{cases} x_f = 70 t_f - 280 \\ x_f = 3 t_f^2 - 48 \end{cases} \Rightarrow 70 t_f - 280 = 3 t_f^2 - 48 \; ; \; 3 t_f^2 - 70 t_f + 232 = 0 \; ; \; t_f^{I,II} = \frac{70 \pm \sqrt{70^2 - 4 \cdot 3 \cdot 232}}{6}$$

$$t_f^{I,II} = \frac{70 \pm 46}{6} \nearrow \frac{116}{6} \cong 19{,}3\,s$$

$\hookrightarrow \frac{24}{6} = 4\,s$: 1ère rencontre

$\Rightarrow$ a) : $\underline{19{,}3\,s}$

b) : $\Delta x_2 = 70 \cdot 19{,}3 \cong \underline{1531\,m}$