[lex167] Lorentz transformation II

Consider the two events with coordinates $x_1 = 1\text{ly}$, $t_1 = 1\text{y}$ and $x_2 = 2\text{ly}$, $t_2 = 0.5\text{y}$ in frame $\mathcal{F}$. The units are light-years and years. The two events are simultaneous in frame $\mathcal{F}'$.
(a) Find the relative velocity v between frames $\mathcal{F}$ and $\mathcal{F}'$.
(b) Find the time $t'_1 = t'_2$.

Solution: