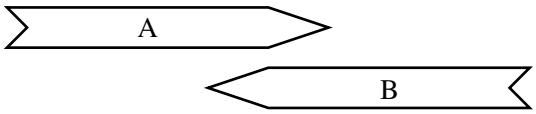
[mex236] Time on the fly

Spaceships A and B, each having proper length $\ell_0 = 100\text{m}$, pass each other moving in opposite direction with relative velocity of $v_r = 7 \times 10^7\text{m/s}$. Each spaceship has synchronized clocks at both ends, front and rear.

The clocks at the front end of spaceship A and at the rear end of spaceship B happen to strike noon simultaneously, $t_{AF} = t_{BR} = 12:00:00.00000000$, when they are opposite one another. What are the readings t_{AR} and t_{BF} of the clocks at the rear end of spaceship and at the front end of the spaceship B, respectively, when they are opposite one another?



Solution: