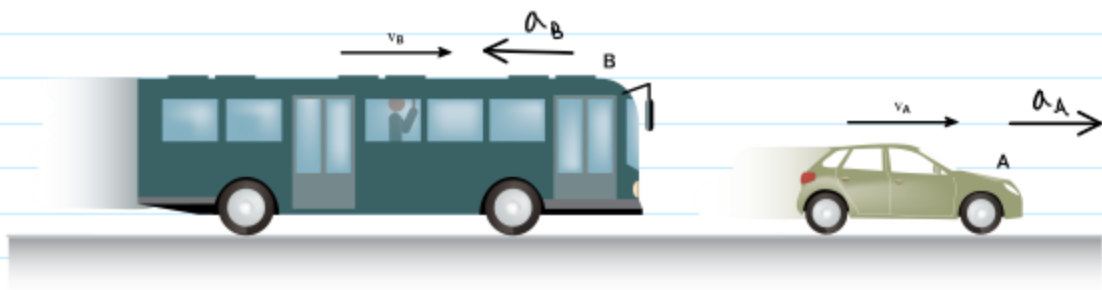


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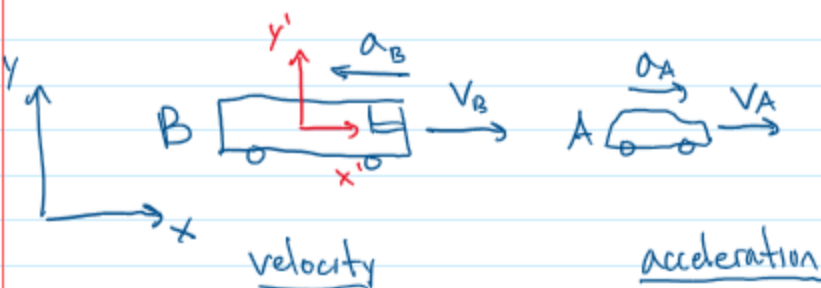


You are riding on a bus (B) travelling at V_B . Driving in front of the bus is a car (A) travelling at V_A .

Your stop is approaching, so you pull the stop request cord.

The bus begins to decelerate at a_B , while the car in front begins to accelerate at a_A .

What is car A's velocity and acceleration relative to you riding on bus B?



$$\begin{matrix} V_A = V_B + V_{A/B} \\ \uparrow \quad \uparrow \\ \hat{i} \quad \hat{i} \end{matrix}$$

$$\begin{matrix} a_A = a_B + a_{A/B} \\ \uparrow \quad \uparrow \\ \hat{i} \quad \hat{i} \end{matrix}$$

given
 V_A
 V_B
 a_A
 a_B

find
 $V_{A/B}$
 $a_{A/B}$

$$\underline{V_{A/B} = V_A - V_B}$$

$$\underline{a_{A/B} = a_A - a_B}$$

Pay attention to signs!