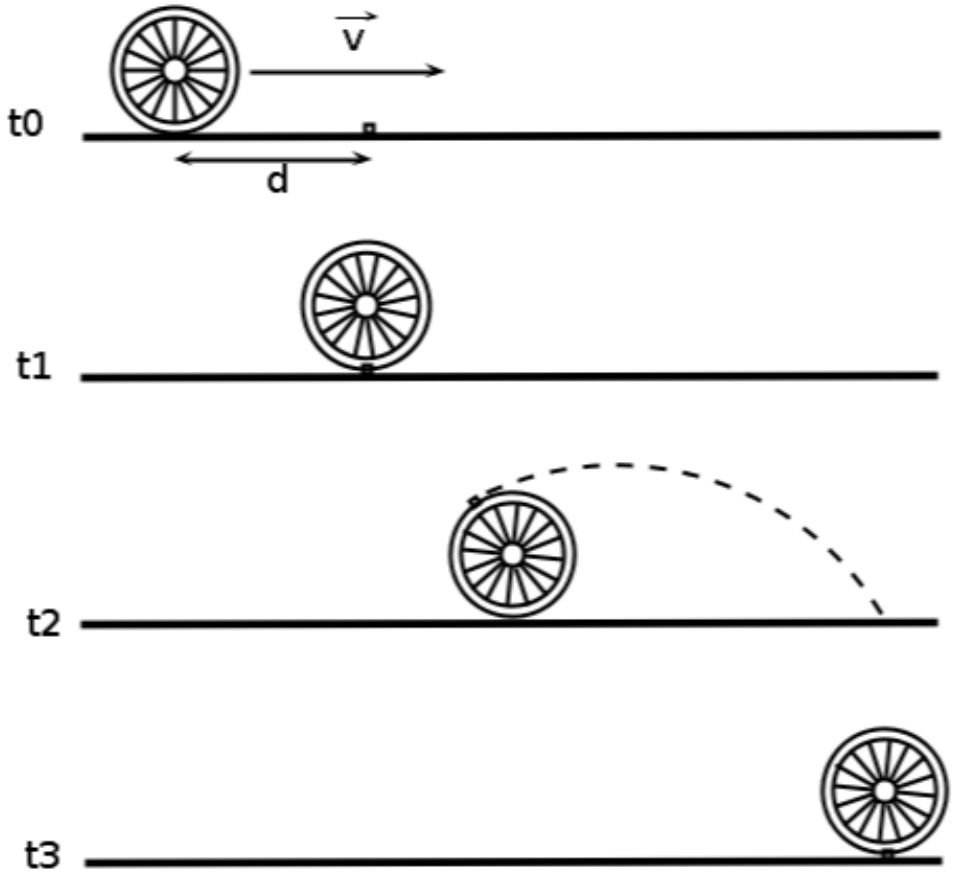

A wheel of radius R is rolling on the street with constant velocity $\vec{v}$. At time $t_0 = 0$ it is at a distance d from a chewing gum that is on the street right in front of the wheel. At time t_1 the wheel passes over the chewing gum but the chewing gum sticks to the wheel. After rolling together with the wheel for an angle $\theta \in (90^o, 180^o)$, at time t_2 the chewing gum detaches from the wheel. At time t_3 the wheel passes over the chewing gum again. Calculate t_1, t_2, t_3.