

6. A particle  $A$  of mass  $m_1$  is suspended under the ceiling by a string of length  $l_1$ . Another string of length  $l_2$  has one end connected to  $A$  and the other end connected to a particle  $B$  which has mass  $m_2$ . The system is at rest under gravity and a horizontal strike is given to particle  $A$  such that it obtains an instantaneous speed  $v$ , find the tensions of the two strings at the instant when the strike is applied. Assume that both strings are light.