

- Two particles of masses m_1 and m_2 are attached to the ends of a light spring. The natural length of the spring is l , and its tension is k times its extension. Initially, the particles are at rest, with m_1 at a height l above m_2 . At $t = 0$, m_1 is projected vertically upward with velocity v . Find the positions of the particles at any subsequent time (assuming that v is not so large that the spring is expanded or compressed beyond its elastic limit).