$N+1$ balls, with masses $m_0, m_1, m_2, ...m_N$, move together along a line toward a (perpendicular) wall, at a constant velocity $v$, with $m_0$ at the head of the line. Assume that all collisions are perfectly elastic.

A. Find a recursion relation to determine $m_1, m_2, ...m_N$ in terms of $m_0$ so that $m_N$ will have all of the kinetic energy of the system once all the collisions are complete.

B. Find the final speed of $m_N$ in terms of $v$.