IC_W08D1-5 Table Problem: Sliding Block Recoil

A small cube of mass $m_1$ slides down a circular track of radius $R$ cut into a large block of mass $m_2$ as shown in the figure below. The large block rests on a table, and both blocks move without friction. The blocks are initially at rest, and $m_1$ starts from the top of the path. Find the velocity $v_1$ of the cube as it leaves the block.