

Week 35 (5/12/03)

Rising hoop

Two beads of mass m are positioned at the top of a frictionless hoop of mass M and radius R , which stands vertically on the ground. The beads are given tiny kicks, and they slide down the hoop, one to the right and one to the left, as shown. What is the smallest value of m/M for which the hoop will rise up off the ground at some time during the motion?

