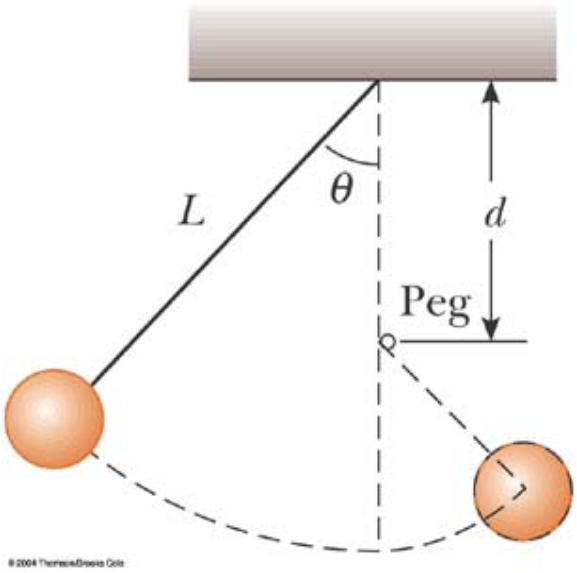
UNIVERSITY OF MARYLAND

Department of Physics

Quiz #8

Physics 161, Calculus Mechanics and particle dynamics
Chapter 8, Conservation laws

A pendulum, comprising a string of length L and a small sphere, swings in the vertical plane. The string hits a peg located a distance d below the point of suspension.



a) Show that if the sphere is released from a height below the peg, the sphere will return to this height after interacting with the peg.

b) Also, show that if the pendulum is released from $\theta = 90°$ and in the course of its motion swings in a complete circle around the peg, that the minimum value of d must be: 3L/5