

Quiz 4

A conical pendulum consists of a string (of length L) with one end fixed to the ceiling and the other attached to a mass, m . The mass moves in a horizontal circle at constant speed. The string sweeps out a cone as the mass rotates — hence the name. The cone's vertex angle is θ . Derive a formula for the speed of the mass, in terms of θ , L , m and g . Don't forget to draw a free body diagram!

