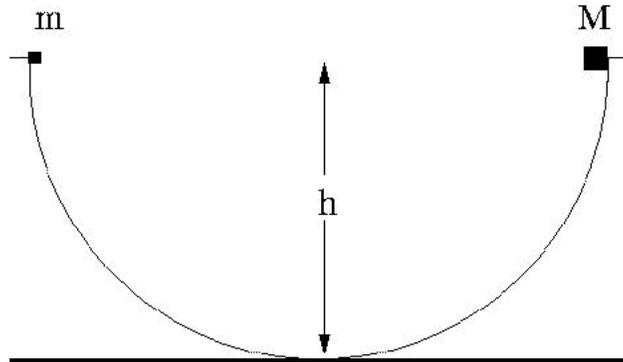


QP7



Two masses (M, m) slide without friction (under the influence of a uniform gravitational field g) down the sides of a hemispherical bowl. They each start with zero velocity at the lip of the bowl, which is a height h above the bottom.

- a) (1 point) What is the total kinetic energy when the masses first touch (assume the size of the masses is much less than h).
- b) (2 points) How high will the masses move if the collision is completely inelastic (i.e. they stick together)?
- c) (2 points) Assuming that the collision between the masses is elastic, what is the maximum height that mass m will achieve?