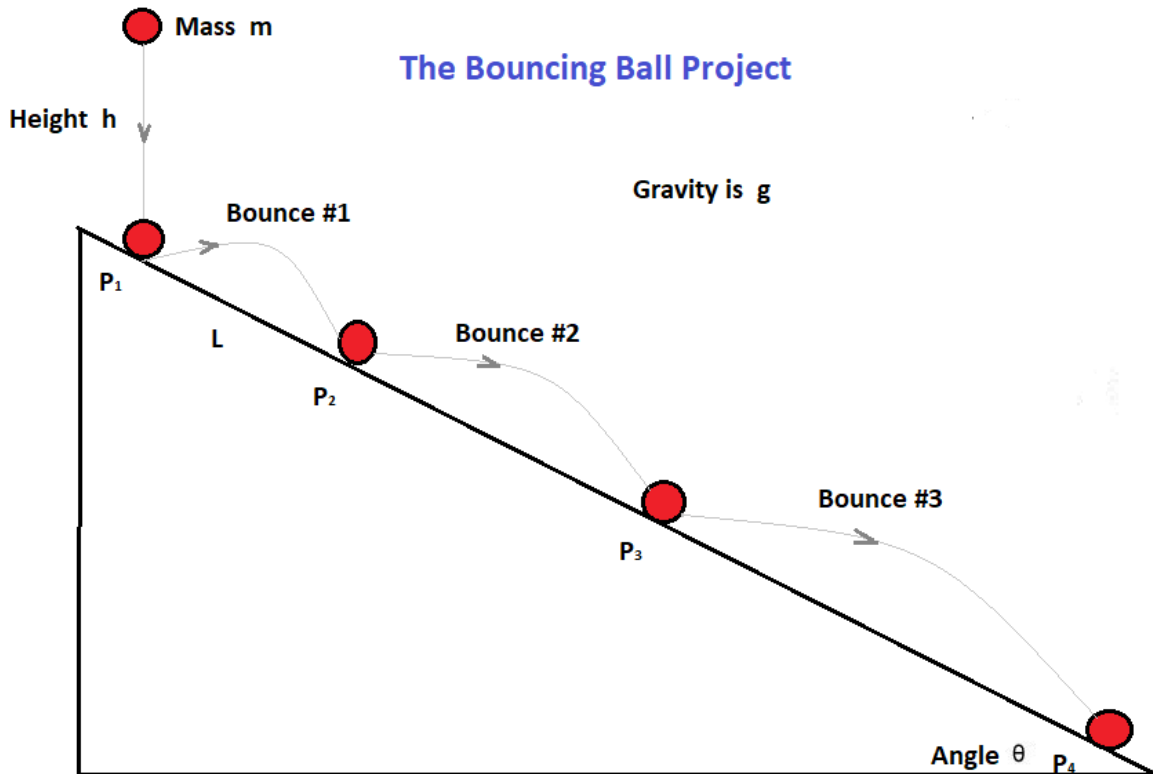


## A physics problem for you

One of the best problems in mechanics in the AP Physics exam given in the past is the bouncing ball problem shown below. A ball is released from a certain height and allowed to bounce on an inclined plane.



To make it a little bit more challenging, the angle  $\theta$  is  $34^\circ$ , the height  $h$  is 1.7 m, the mass  $m$  is 1.0 kg, and gravity is  $9.8 \text{ m/s}^2$ . Can you find the distance traveled  $L$  along the plane and the time  $t$  the ball took during the first three bounces? The beauty of this problem is that to solve it, students need to apply concepts in kinematics, projectile motion, and conservation of energy.