PHYS 1210 Worksheet: Potential Energy and Power

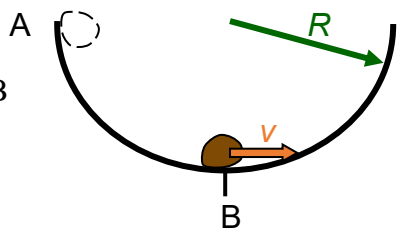
1. An egg is released from rest from the roof of a building of height H and falls to the ground. Its fall is observed by a student on the roof of the building, who uses coordinates with origin at the roof, and by a student on the ground, who uses coordinates with origin at the ground.

   A. Sketch the situation, including the two different coordinate systems.

   B. Identify the values assigned to the following quantities by the two students.

	Ground-based	**Roof-based**
initial gravitational potential energy		
final gravitational potential energy		
change in gravitational potential energy		
Final kinetic energy		

2. A small rock with a mass of 0.20 kg is released from rest at point A at the top of a hemispherical bowl of radius R = 0.5 m. The rock slides rather than rolls. The work done by friction when it moves from A to B is –0.22 J. What is the speed v of the rock when it reaches point B?



   Outline how to set up the solution to this problem using conservation of energy.