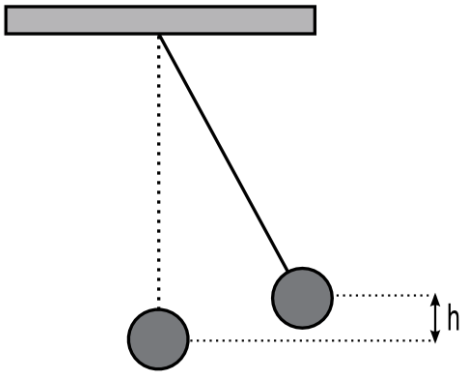
Name: _____

The Ballistic Pendulum
Pre-Lab
(Due at the beginning of lab period.)

1) Derive an expression (i.e., a symbolic equation) based on conservation of energy for the velocity of the mass on a simple pendulum as it hits the lowest point in its swing. Assume that the mass on the pendulum starts at rest and at a height *h* above its lowest point. Remember, only the vertical height of an object matters in a calculation involving gravitational potential energy.



2) What type of collision occurs in this lab procedure between the projectile and the pendulum bob (i.e., elastic, inelastic, etc.)? What type of collision occurs when the projectile hits a cement floor? Give a brief justification of your answers.