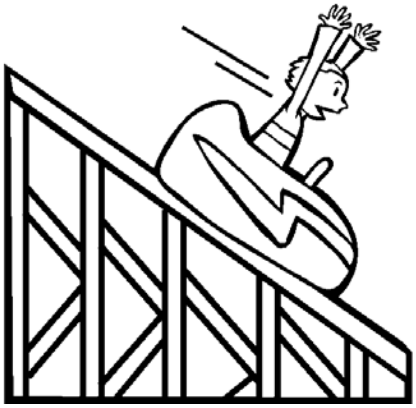
Physics 11

Name: _____

Law of Conservation of Energy

Date: _____



The Law of Conservation of Energy:

- Energy cannot be _____, but it can change from one form to another
- The _____ of an isolated system remains _____

Recall that both _____ and _____ _____ are types of _____.

The Law of Conservation of Mechanical Energy states that, in a frictionless system, _____ _____throughout motion.

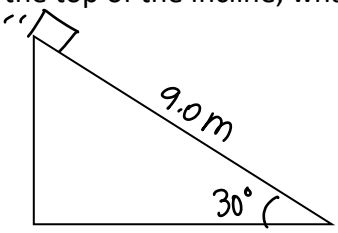
- In other words, the _____.
- Note: if there is friction, some mechanical energy will be converted to _____

Practice Questions: (Use 9.8 m/s^2)

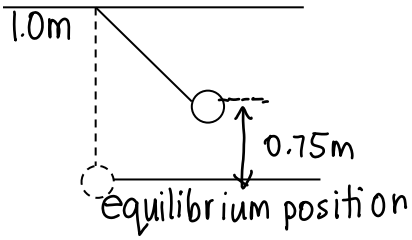
1. A heavy object is dropped from a vertical distance of 12.0 m above the ground. What is the speed of the object as it hits the ground? (15.3 m/s)

2. A heavy object is thrown vertically down from the top of a 1.00 x 10^2 m building at a velocity of 10.0 m/s. What is the speed as it reaches the ground? (45.4 m/s)

3. A heavy object slides down a frictionless surface. If the box starts from rest at the top of the incline, what is its speed at the bottom? (9.4 m/s)



4. A pendulum is dropped from the position shown in the diagram 0.75m above the equilibrium position. What is the speed of the pendulum bob as it passes through the equilibrium position? (3.8 m/s)



5. A roller coaster car starts from rest at point A. What is the speed of the car at point C if the track is frictionless?