Potential and Kinetic Energy Practice

Energy *Energy is the ability to do work.* There are many forms of energy; we will study 2 of those forms (kinetic and potential energy). Energy is also measured in Joules (J).

Example 1:

a. *A 0.20 kg apple hangs 7.0 m above the ground from a tree. Calculate the potential energy of the apple.*

b. *What will be the change in potential energy if the apple falls and lands on a table located 2.0 m above the ground?*

c. *How will the PE lost during the fall compare to the KE gained during the fall?*

Example 2: Calculate the KE of:

a. *A 10.0 kg ball traveling 5.00 m/s*

b. *A 5.00 kg ball traveling 10.0 m/s*

Conservation of Energy (Sec 8.6 pg. 109-111)

PE = KE **PE = mgh** **KE = (1/2m)v^2**

1. A 500. kg rock is pushed off of a cliff that is 200. m tall

   a. Determine the potential energy of the rock at the top of the cliff. _____ J

   b. What is the KE of the rock while resting at the top of the cliff? _____ J

   c. What is the total energy of the rock at the top of the cliff? _____ J

   d. At the bottom of the cliff, what will be the PE? _____ J the KE _____ J

   e. What will be the velocity of the rock at the bottom of the cliff?

   f. What will be the values of the KE and PE of the rock when it is falling at a speed of 20. m/s?