

Name: _____

Date: _____

MCHS Honors Physics 2014-2015

Work and Energy 2

Work = Force x Distance $\rightarrow W = F \cdot d$ or $W = F \cdot d \cdot \cos \theta$

Kinetic Energy: $KE = \frac{1}{2}mv^2$

Potential Energy: $PE = m \cdot g \cdot h$

Mechanical Energy: $ME = KE + PE$

1. A bird is flying over water with a speed of 18.0 m/s over water when it accidentally drops a 2.00 kg fish. If the altitude of the bird is 5.4 m and friction is disregarded, what is the speed of the fish when it hits the water?

2. A 755 N diver drops from a diving board 10.0 m above the water. Find the diver's speed 5.00 m above the water's surface. Then find the diver's speed just before hitting the water.

3. If the diver in problem 2 leaves the board with an initial upward speed of 2.00 m/s, find his speed when striking the water.

4. A pendulum bob is released from some initial height such that the speed of the bob at the bottom of the swing is 1.9 m/s. What is the initial height of the bob?