

# READING ASSIGNMENT FOR OCTOBER 21

## SECTIONS 10.3, 10.4. AND 10.1

Please notice that this file is two pages long.

### 10.3 Kinetic Energy

- Kinetic Energy,  $K$  - energy of motion.
- $K = \frac{1}{2}mv^2$ .
- The book doesn't quite make this clear, but the *total work* done on an object is what equals the change in its kinetic energy.
- Total work being equal to the change in kinetic energy is what I call the "work-energy" theorem.
- Skip the section on rotational kinetic energy. It will make more sense when we go back and do chapter 7.

### 10.4 - Potential Energy

- I tend to mix introducing potential energy and using it to solve problems. If you want to see some examples of this, you'll find them in Section 10.6 of the textbook.
- Potential Energy - Saved/stored energy.
- Only Conservative forces create potential energy.
- We'll deal with only two conservative forces this term - gravity and the springs.
- The potential energy due to gravity depends only the object's height above the ground.
- The potential energy of a spring is called the elastic energy. It depends on how far a spring has been stretched or compressed.

## 10.1 - The Law of Conservation of Energy

- Just read the subsection of 10.1 dealing with the law of conservation of energy.
- Be please aware, that I hold a slightly different view than the textbook does, so I will be teaching this in a slightly different way. Expect to be seeing lots of bar graphs!!
- I would say that when only conservative forces do work on an object then its total energy, kinetic plus potential, cannot change.