Physics 151 Reading Assignment for June 25 Sections 5.4 to 5.8

Please notice that this file is two pages long.

5.5 Friction

- Here's where we learn about the simple model for kinetic and static friction.
- Static friction is tricky - it can grow in strength.
- The static friction has a maximum magnitude that is proportional to the magnitude of the normal force.
- Also, the material types determine the maximum amount of static friction. We quantify this by using the coefficient of static friction, μ_s.
- The equation, $f_{s,max} = \mu_s n$ can only be used in problems where the static friction is guaranteed to be at its maximum value.
- Kinetic friction is much easier. Its magnitude is mostly constant and is given by the equation $f_k = \mu_k n$.
- I tend to ignore rolling friction. It's usually quite small. But do pay attention to the fact that the friction that makes wheels roll forward is static friction.

5.6 Drag

- This is some good stuff here, especially how drag depends on the speed squared of an object, but it's a little too much for us. Covering everything else will take more than enough time already, so read this for your own education.

5.7 Interacting Objects

- This is where the 3rd law really becomes important for our problem solving.
- Objects in contact always have the same acceleration.

5.8 Ropes and Pulleys

- Massless ropes always exert the same magnitude of tension on each end.
- Pulleys - change the direction of tension forces without a change in magnitude.