Forces Test

Types of Problems:

**Simple Problems** – F = ma given two variables solve for the third.

General Fnet problems – given different forces, solve for the acceleration of one object or the missing force

**Static Problems** – These are the ones with tension where two strings are suspending an object, set up the net force equations in the x and y and Fnet is equal to zero, make sure that if the tensions are angled, you write the x and y components in terms of the total tension (i.e. T2cos35)

**Accelerators** – multiple blocks are accelerating. For these problems create a net force equation for each block, set Fnet equal to ma and then make sure that the positive direction is the one in which the object is accelerating

**Ramp Problems** – the ramp can be found in any type of problem, just make sure that you use an axis system where one axis is parallel to the ramp and one is perpendicular to the ramp – gravity will go on an angle

**Friction Problems** – These can be static or kinetic – Use Ff=µFn and then incorporate the force of friction into the free body diagram and net force equation. Make sure that you solve for Fn using a net force equation in the y direction – it does not always equal mg.

**Buoyancy Problems** – Remember that buoyant force equals the weight of the fluid displaced so Fb= Density (of fluid displaced) x Volume x 9.8 m/s/s. From there the buoyant force just needs to be incorporated into a free body diagram and force net equation.