1 Class Handout - Friction and Inclined Planes

1. A $20kg$ mass is at rest on a horizontal flat surface. If the coefficient of static friction $\mu_s = .7$, what is the force due to friction, $\vec{F}_f$, if the mass is being pulled to the right with a force of 70 N?

2. A $20kg$ mass slides on a horizontal flat surface. If the coefficient of kinetic friction $\mu_k = .4$, what is the acceleration of the mass if there is a force pulling to the right of $180N$?

3. Consider a mass sliding down a frictionless inclined plane that is at an angle of $30°$. What is the accleration of the mass?

4. Find the accleration of a mass sliding down an inclined plane (60°), where the coefficient of kinetic friction is $\mu_k = .4$.

5. Consider an object initially at rest on an inclined plane of 45°. If the coefficient of static friction $\mu_s = .6$, will the object stay put or accelerate down the ramp?