PHY 711 – Assignment #8
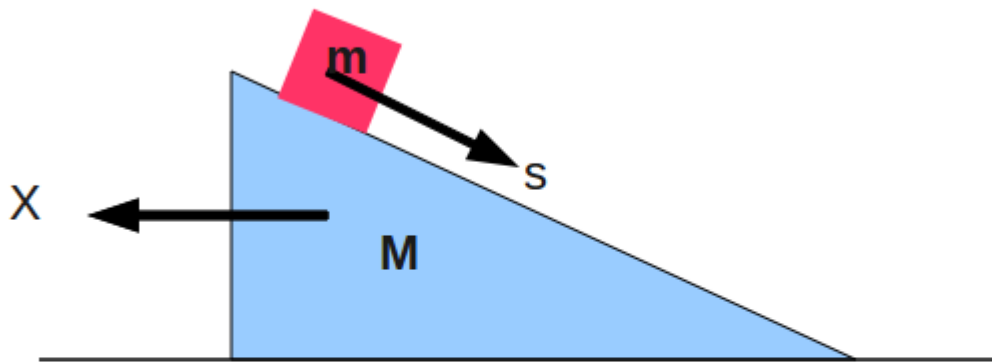
1. The figure above shows a box of mass m sliding on the frictionless surface of an inclined plane (angle θ). The inclinded plane itself has a mass M and is supported on a horizontal frictionless surface. Write down the Lagrangian for this system in terms of the generalized coordinates X and s and solve for the equations of motion, assuming that the system is initially at rest.