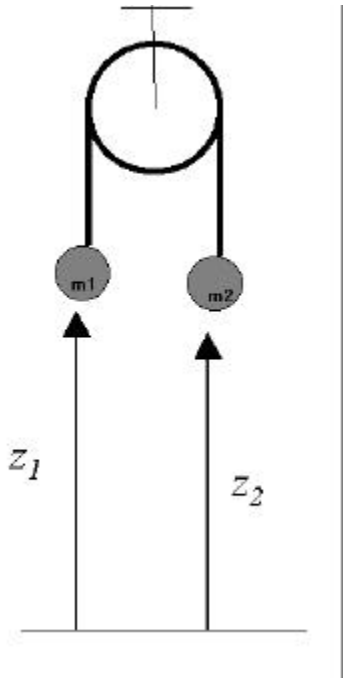
September 8, 1999

**PHY 337– Problem Set # 6**




Consider a stationary pulley (assumed to be massless and frictionless) with masses $m_1$ and $m_2$ at heights $z_1(t)$ and $z_2(t)$ held by a massless rope. Write the equations of motion for the heights $z_1(t)$ and $z_2(t)$ using the Lagrangian formalism and the constraint $z_1(t)+z_2(t)-C=0$. Here $C$ is a constant related to the length of the rope. Show that the Lagrange multiplier is related to the tension.