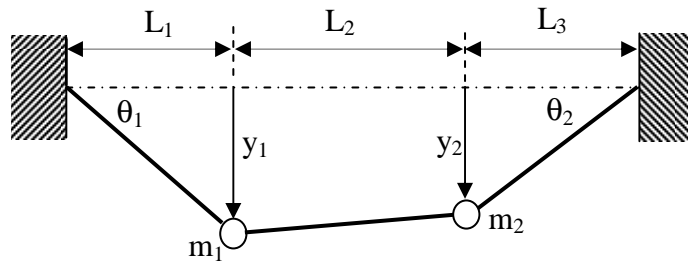


ME 588 - Assignment 1
Due Oct 8, 2007

- 1) Two masses, m_1 and m_2 , suspended on a massless string, are vibrating in a vertical plane as shown in the figure below. The displacement are sufficiently small that the slope of the string at any point remains small and the tension T in the string remain constant at all times. Derive the equations of motion by means of Newton's second law. (Problem 2.2 in textbook)



- 2) A particle describes a circular path. Under the action of a central force field given by $f(r) = -\alpha r^{-2} e^{-\beta r}$, where $\alpha, \beta > 0$. Investigate the stability of small radial perturbations of the circular orbit.
- 3) Problem 2.8