

Lecture 22 Homework

Problem 22.1

- Determine the equations of motion for the system below for θ arbitrarily large.
- Linearize the equations by neglecting the product of terms and by letting $\sin\theta = \theta$ and $\cos\theta = 1$.
- Write the equations in matrix form and then find the natural frequencies and modes assuming $m_1 = 30$ kg, $m_2 = 2$ kg, $k_1 = 15$ N/m and $L = 2$ m.

