

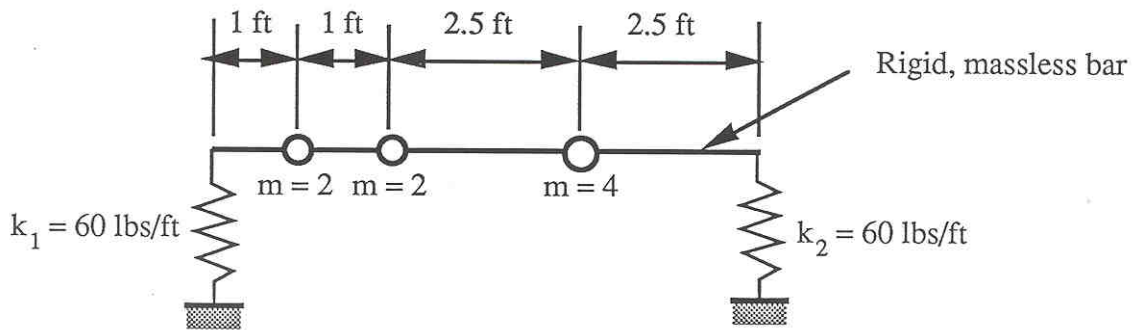
**Homework**  
**Lecture 18**

**Problem 18.1**

Do 5.8 in Rao.

**Problem 18.2**

Given the 2 degree of freedom system shown below



(the concentrated masses are given in slugs)

Determine:

- The equations of motion in terms of the vertical displacement of the center of mass and a rotation. Note: You will need to find the center of mass and the mass moment of inertia about G.
- Determine the natural frequencies and modes of the structure. Sketch the modes.