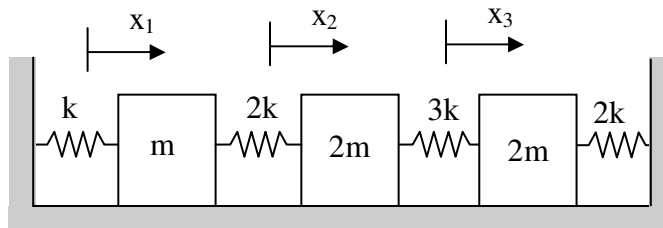


Lecture 26 Homework

Problem 26.1

Determine the natural frequencies and mass normalized modes for this system.



To get a copy of a portion of a Matlab session type

diary on

to start writing to a file, and

diary off

when you are done. The file written will be in the current directory and will be called "diary". Type "help diary" for additional help on this command. Be sure to demonstrate that the modes are mass normalized.

Problem 26.2

After doing your vibrations HW you placed it on the couch. Unfortunately, your dog ate most of your work and the only scrap of paper remaining is shown below. Is mode 1 mass normalized? Find the missing 3rd element of the second mode?

The diagram shows a hand-drawn outline of a piece of paper containing the following information:

$$[M] = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$
$$\{X\}_1 = \begin{Bmatrix} 1 \\ 1 \\ 1 \end{Bmatrix} \quad \{X\}_2 = \begin{Bmatrix} 1 \\ -0.219 \\ \end{Bmatrix}$$