

This week we will focus on the examples from the book where we decouple a 2D problem in to separate 1D problems. The Mathematica example from class is on the website (not Canvas).

- #1) (20 points) Example 5: a) by hand, and b) by Mathematica
- #2) (20 points) Example 7: a) by hand, and b) by Mathematica

► **Example 5.** Let's consider a model of a linear triatomic molecule in which we approximate the forces between the atoms by forces due to springs (Figure 12.2).

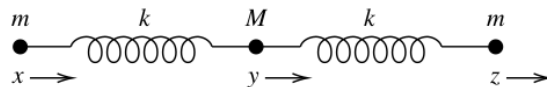


Figure 12.2

► **Example 7.** Find the characteristic frequencies and the characteristic modes of vibration for the system of masses and springs shown in Figure 12.3, where the motion is along a vertical line.

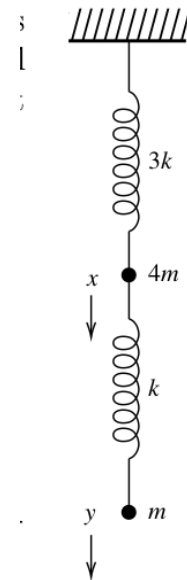


Figure 12.3