

Week 9 Worksheet: Normal modes

To receive credit, hand in your solved practice problem. Try unfinished problems at home. Solution of this worksheet will be made available on the website.

1. **(Demonstration)** Review how to derive the governing equations, determine the normal modes, and write the general solution of the following spring-mass problem discussed in lecture:

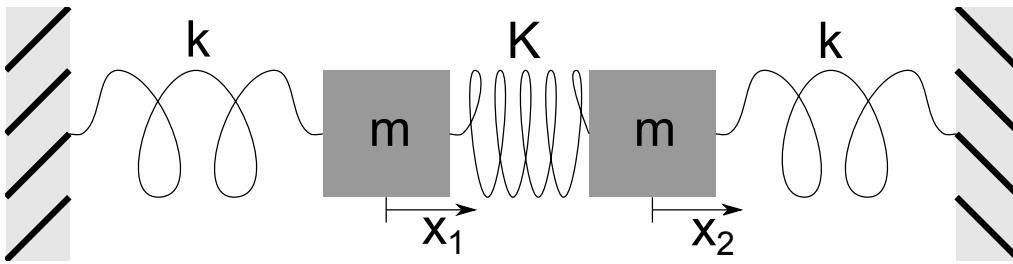


Figure 1: *Two masses, three springs*

2. **(Practice)** Find the governing equations, determine the normal modes, and write the general solution of the following spring-mass problem:

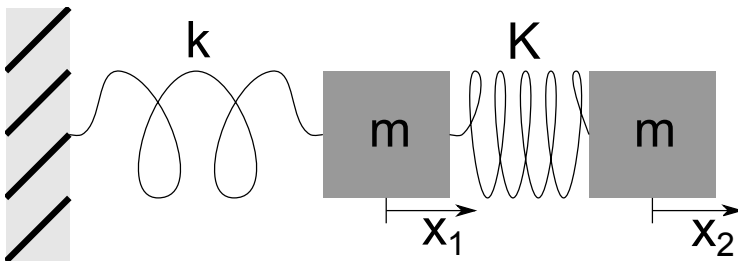


Figure 2: *Two masses, two springs*

3. **(Practice)** Find the governing equations, determine the normal modes, and write the general solution of the following spring-mass problem:

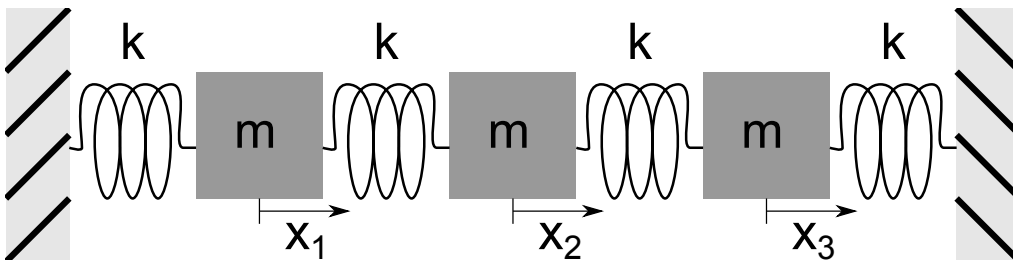


Figure 3: *Three masses, four springs*