

Questions on Coupled Oscillators, Snakes and Chains:

1. What are the Lissajous figures?
2. When is the Lissajous figure open and when is it closed?
3. If each of the decoupled pendula are subject to harmonic oscillations does it mean that the system of two coupled pendula is necessarily in a periodic motion?
4. What are the normal modes? Briefly describe them.
5. What is wave?
6. What is the wavelength?
7. What is the wavespeed?
8. What is IVP?
9. Show (graphically) how the solutions of $e^{iN\phi} = 1$ is obtained. How many of them can be found?
10. What is the trivial solution?
11. What is the dispersion relation?
12. What is the difference in wave solutions corresponding to the periodic and fixed-end boundary conditions?
13. What are forced vibrations?
14. What is the cut off frequency?
15. What is the wave equation? What does it describe and what are the major properties of its solution?