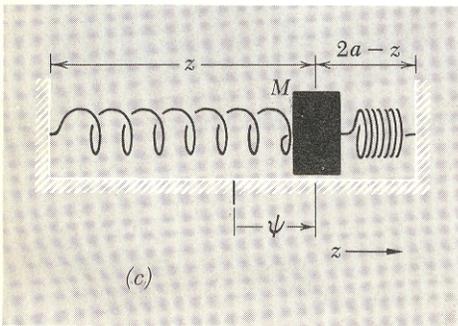
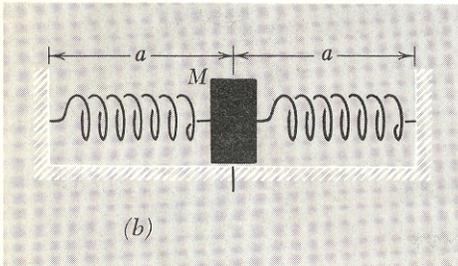
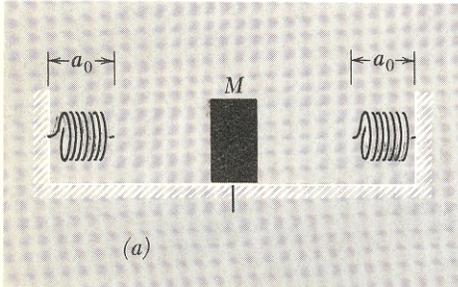


PHYS205 Assignment 6

Due Monday 30th April 2018 5 pm to the PHYS205 assignment Dropbox 5th floor West (chem side)

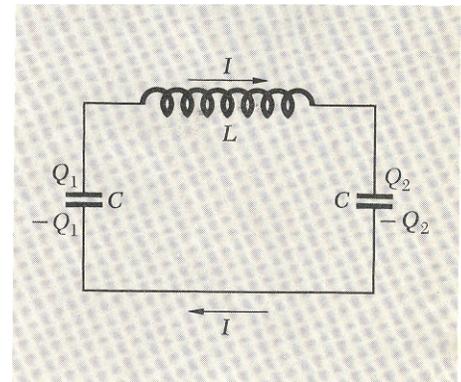


Question 1 [10 marks]

Consider the figure opposite, having a mass M connected to rigid walls via two springs each having a spring constant K and a relaxed length a_0 , as shown in (a). At equilibrium (b) each spring is stretched to a length a and therefore each spring has a tension $K(a - a_0)$ at equilibrium. Considering (c) derive an expression for the resonance frequency of the mass-spring system. Show all of your working.

Question 2 [10 marks]

The figure opposite shows a free oscillator composed of an LC circuit. Derive an expression for the resonance frequency. Show all of your working.



[Total Marks: 20]