

Cinématique et
dynamique des machines



Dynamics and introduction to vibrations

Exercise Session 3

14/12/2022

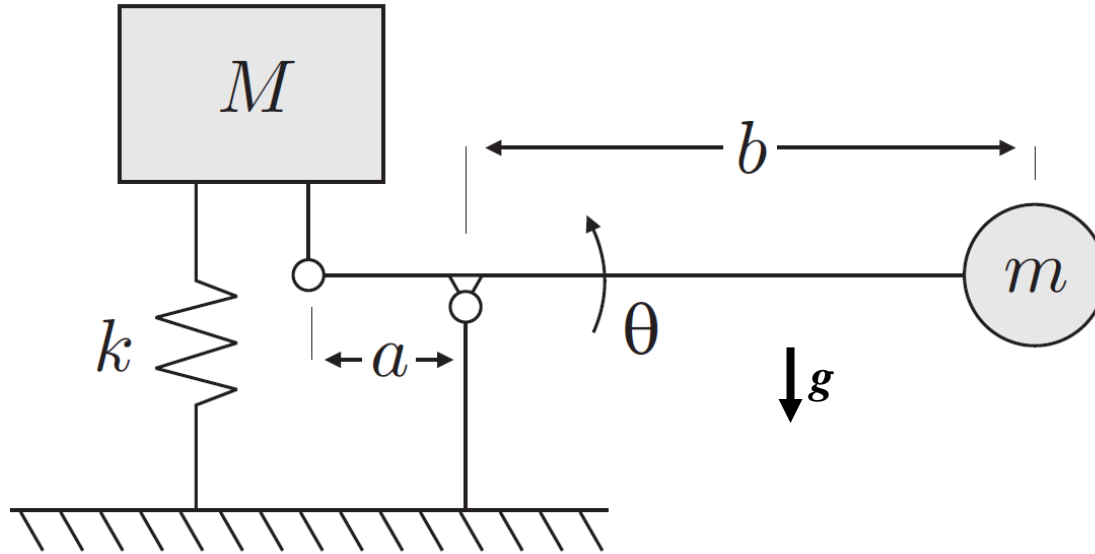
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Problem 1

Dynamics

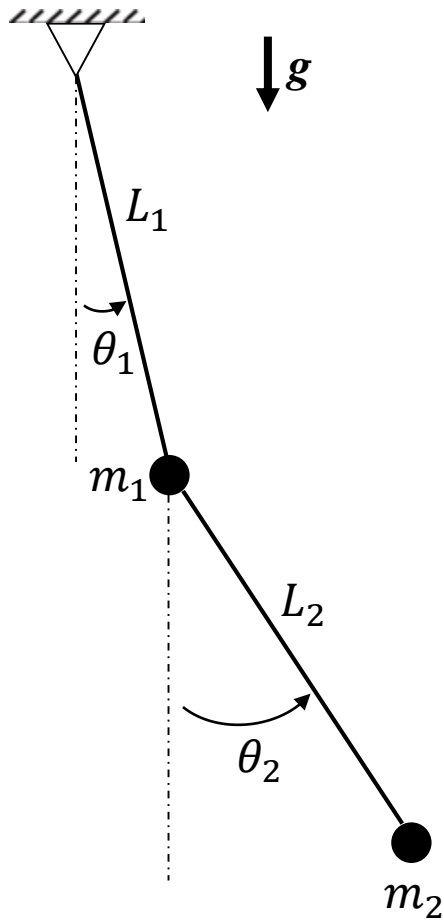
Build the equation of motion of the following system and extract the resonance frequencies for small oscillation of the masses.



Problem 2a

Dynamics

Build the Lagrangian of the following system where the rods are supposed to be homogenous and infinitely stiff



Problem 2b

Do the same if the inertia of the masses are taken into account: I_1 for mass 1 and I_2 for mass 2

Problem 3

Dynamics

Build the equation of motion of the following system and extract the resonance frequency when the variable x is considered as imposed

