

A simple pendulum consists of a mass m at one end of a massless rigid rod of length d . It is pivoted on the end without a mass and free to move in a vertical plane.

- a. How many degrees of freedom does the pendulum have?
- b. Write the Lagrangian for the pendulum.
- c. Use the Lagrangian to generate an equation or equations of motion.
- d. If we limit the pendulum to small angle motion, what is the angular frequency?