Recitation Exam 11

Problem 1: (10 points)

A long rod of mass $M$ and length $L$ is pivoted at one end. The rod can rotate freely about the pivot. The other end of the rod is connected to a spring of force constant $k$ which is rigidly mounted as shown. The rod is displaced from its equilibrium position by a small angle and released. Calculate the period of small oscillations of the rod about its equilibrium position.

*Ignore gravity: only consider the effect of the spring on the rod.*