

Physics 321
Homework 21

Due at midnight on the day of Hour 22.

Just another example of using the Hamiltonian.

Problems:

1. A double pendulum (such as that illustrated in Figure 7.3 in the text) consists of two identical pendula attached one to the other. The upper pendulum is moved to an angle of 30 degrees and released from rest. Find the motion of the system.

$d = 1.00$ m is the length of pendulum

$m = 250$ g is the mass of each pendulum

θ_1 is the angle (0 is down) of the upper pendulum,

θ_2 is the angle of the lower pendulum.

Note that you will get some long expressions in this problem.

I have also set up the problem a little differently, using "subs," etc., so that is a bit more streamlined.