## PROBLEM SET

Assignment 6

Math 4330, Spring 2017

May 4, 2017

- Write all of your answers on separate sheets of paper. You can keep the question sheet.
- You must show enough work to justify your answers. Unless otherwise instructed, give exact answers, not approximations (e.g., \sqrt{2}, not 1.414).
- This problem et has 1 problems. There are **100** points total.

Good luck!

**Problem 1.** In this assignment you want to work out the equations of motion of some simple mechanical system, the write a python program

(or a Jypiter notebook) to animate the motion of the system, with given initial conditions.

Send me the notebook or python files, plus a movie or two. Some suggested systems are

- A spherical pendulum
- A double pendulum (in the plane).
- A cart that can move along the x-axis that has a pendulum hanging down from it, and its attached to a wall on the left by a spring (remember Hooke's law).
- Make the cart and the pendulum more complicated
- A double spherical pendulum?

If you want to invent your own system, check it with me.