

Phys 410

Fall 2013

Homework #9

Due Thursday, 14 November, 2013

All problems are from Taylor, *Classical Mechanics*.

- 1) Problem 13.18 Hamiltonian of a charged particle in a magnetic field
- 2) Problem 13.28 Phase space of the one-dimensional anti-spring
- 3) Problem 13.35 Liouville's theorem applied to a charged particle beam
- 4) Problem 10.5 Center of mass by integration
- 5) Problem 10.9 Moment of inertia of a cylinder
- 6) Problem 10.15 Moment of inertia of a cube
- 7) Problem 10.22 Inertia tensor for 8 masses
- 8) Problem 10.24 Generalization of the parallel axis theorem
- 9) Problem 10.25 Moment of inertia tensor for a brick
- 10) Problem 10.35 Principal axes for a set of masses

Extra Credit

- 1) Problem 10.33 Kinetic energy in terms of the inertia tensor