

**Phys 410**

**Fall 2015**

**Homework #8**

**Due Thursday 5 November, 2015**

All problems are from Taylor, *Classical Mechanics*.

- 1) Problem 8.16 Elliptical orbit derivation
- 2) Problem 14.4 Scattering from a copper foil
- 3) Problem 14.8 Solid angle
- 4) Problem 14.11 Differential scattering cross section
- 5) Problem 14.14 Scattering in two dimensions
- 6) Problem 14.19 Symmetry of orbit in Rutherford scattering
- 7) Problem 13.3 Hamiltonian of Atwood with rotational inertia
- 8) Problem 13.21 Ignorable coordinates and conservation laws
- 9) Problem 13.23 New and improved Atwood machine
- 10) Problem 13.26 Phase-Space Orbit

Extra Credit

- 1) Problem 14.12 Quantum scattering theory