

**Phys 410**

**Spring 2013**

**Homework #1**

**Due Friday, 1 February, 2013**

All problems are from Taylor, *Classical Mechanics*.

- 1) Problem 1.10 Circular motion
- 2) Problem 1.26 Motion in inertial and non-inertial reference frames
- 3) Problem 1.31 Conservation of linear momentum
- 4) Problem 1.36 Newton's 2<sup>nd</sup> Law of motion
- 5) Problem 1.46 Motion as seen in a non-inertial reference frame
- 6) Problem 1.48 Cylindrical polar coordinates
- 7) Problem 2.3 The Reynolds number
- 8) Problem 2.4 Origin of the quadratic drag force
- 9) Problem 2.8 Motion with a different drag force law
- 10) Problem 2.24 Terminal velocities
- 11) Problem 2.35 Vertical motion with quadratic drag

Extra Credit

- 1) Problem 1.50 Periodic motion in an anharmonic potential