Phys 410

Fall 2013

Homework #4

Due Thursday 3 October, 2013

NOTE: EXAM #1 is October 17, 2013, Covering ~ chapters 1-6, 9 of Taylor

All problems are from Taylor, *Classical Mechanics*.

1) Problem 5.2 Small oscillations around the minimum of a potential
2) Problem 5.5 The different expressions for harmonic oscillation
3) Problem 5.11 Frequency and amplitude from 2 positions and speeds
4) Problem 5.13   Small oscillations
5) Problem 5.29   Period of a damped oscillator
6) Problem 5.33 Driven damped oscillations
7) Problem 5.36 Transient behavior of damped driven system
8) Problem 5.41 Half-power points near resonance
9) Problem 5.44 Another interpretation of Q
10) Problem 9.1   Buoyant force in an accelerating frame

Extra Credit

1) Problem 5.39   Direct solution of the driven damped harmonic oscillator