

Phys 410

Fall 2014

Homework #4

Due Thursday 2 October, 2014

NOTE: EXAM #1 is October 16, 2014, 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