

## Physics 2301: Problem Set #9

These problems are due at the end of Wednesday April 8.

1. Shankar, problem 5.3.2 pg. 97
2. Shankar, problem 5.3.5 pg. 98
3. Morin 4.19 (Removing a spring) p. 122
4. Morin 4.23 (Corrections to the pendulum) p. 125 (see also BTM 4.3.6) Challenge: use Mathematica to get the  $\mathcal{O}(\theta_0^4)$  term in footnote 6.
5. Morin 4.27 (Another maximum speed) p. 125
6. Morin 4.31 (Springs and one wall) p. 126
7. Morin 4.32 (Springs between walls) p. 126 (see also Shankar, problem 9.6.3 pg. 272)
8. Shankar, problem 9.5.3 pg. 260. (first 3 matrices only)
9. (BONUS) Morin 4.22 (Projectile on a spring) Solve “by hand” on paper as usual, but also have Mathematica Animate[] the motion, submitting an animated .gif to Carmen.