

Homework 2

Due Friday, September 9th at 5pm
in 281 LeConte

Read Chapter 6 of Taylor's Classical Mechanics.

1. Taylor 5.21, p209
2. Taylor 5.30, p210
3. Particular Solutions. This problem justifies my claim in lecture that you should find particular solutions by hook or by crook, that is, by any method you find convenient. On Friday we showed that the general solution of an inhomogeneous differential equation was the sum of a solution to the homogeneous equation x_h and a particular solution x_p to the inhomogeneous equation. Show that it doesn't matter what particular solution you use (!). [Hints: Assume you've found two particular solutions x_{p1} and x_{p2} , show that the difference of these two solutions is a solution to the homogeneous equation. Argue that since this is the case you can switch from one particular solution to the other by changing the constants in the homogeneous solution x_h .]
4. Taylor 5.42, p212
5. Taylor 5.43, p212
6. Taylor 5.44, p212
7. Taylor 5.45, p212