

**Homework April 30, 706, Spring 2009, due: May 7**

- 1) Problem 1 of chapter 5 of Sakurai.
- 2) Problem 3 of chapter 5 of Sakurai. [Some integrals you have to do you have seen before in one of the problems of the 2nd homework assignment.]
- 3) Problem 4 of chapter 5 of Sakurai. [Hint for part (c): try to write the potential energy as a sum of squares.]

General hint: if in any of these problems you redefine operators, *i.e.*, introduce new momenta and position operators or so, make sure that the new operators obey the proper commutation rules!