

Homework March 3, 706, Spring 2011, due: March 11

- 1) Problem 15 of chapter 2 of Sakurai and Napolitano.
- 2) Problem 17 of chapter 2 of Sakurai and Napolitano. The state you construct in part (a) has to be normalized! So, a state $a|0\rangle + b|1\rangle$, with a and b complex numbers, has $a^*a + b^*b = 1$.
- 3) Problem 24 of chapter 2 of Sakurai and Napolitano. [Hint: integrate the Schrödinger equation for this problem between $-\epsilon$ and ϵ , and take $\epsilon \rightarrow 0$ to find a boundary condition on $d\psi/dx$ at $x = 0$.]