Corrections to Prob. Set 8

1. In Problem 3, the calculation is difficult if you do not assume that ka is small compared to unity (here k is the wave vector of the final, free-electron state and a is the linear dimension of the atomic 1s state). Therefore, you should make this assumption in your calculation, and just calculate the ionization rate to lowest non-vanishing power in ka.

2. In Problem 4, instead of $c_n(t)$ in eq. (1), I should have written $c_n(t)\exp(-iE_nt/\hbar)$, where E_n is an eigenvalue of the unperturbed Hamiltonian H_0, i. e., $H_0|\phi_n\rangle = E_n|\phi_n\rangle$.