

Homework 4

Due Friday 3 June

1. 18.2.2, p. 476 from Shankar
2. 18.2.4, p. 478 from Shankar
3. A particle of mass m is initially in the ground state (E_1) of an infinite square well of width L . Starting at time $t = 0$, the system is subject to the perturbation

$$H'(t) = V_0 x^2 e^{-\frac{t}{\tau}}$$

where V_0 and τ are constants. Find the probability that the energy after time T is measured to be E_2 . Calculate the probability in the limit $T \rightarrow \infty$.

4. 19.3.3, p. 533 from Shankar
5. 19.5.4, p. 554 from Shankar