PHY 6646 - Quantum Mechanics II - Spring 2020
Homework set # 9, due March 18

1. Derive Eq. (17.3.22) from Eqs. (17.3.12) and (17.3.21) in Shankar's book.

2. Problems 17.3.3, 17.3.4, 18.2.1, 18.2.2 in Shankar's book.

3. Consider a particle in the ground state of a box of length L. Argue on semiclassical grounds that the natural time period associated with this state is $T \simeq mL^2/\hbar\pi$. If the box expands asymmetrically to double its size, from $0 < x < L$ to $0 < x < 2L$, in time $\tau << T$ what is the probability of catching the particle in the ground state of the new box?