

PHY 5667 : Quantum Field Theory A, Fall 2003

November 13th, 2003

Assignment # 6

(due Tuesday December 2nd, 2003)

1. Problem 5.1 of Peskin and Schroder's book (use Problem 4.4 only as a reference).
2. Derive *Klein-Nishina formula* (Eq. (5.91)) showing all the details of your calculation.
3. Calculate the UV divergent part of the electron self-energy and of the electron vertex function using Pauli-Villars regularization.