

PHY 5667 : Quantum Field Theory A, Fall 2002

October 8th, 2002

Assignment # 3

(due Thursday October 17th, 2002)

1. Show that the QED Lagrangian in Eq. (4.4) of Peskin and Schroeder's book is invariant under the gauge transformation given in Eq. (4.6).
2. Using the same technique applied to prove Eq. (4.37) of Peskin and Schroeder's book, show explicitly how to obtain Eq.(4.39). Also, show that $\langle 0|T\{\phi(x_1)\phi(x_2)\phi(x_3)\}|0\rangle = 0$.