1. Derive explicitly Eqs. (3.104), (3.105), and (3.113) of Peskin and Schroeder’s book.

2. Read Section 3.6 of Peskin and Schroeder’s book and derive the results summarized in the table on page 71.

3. 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).