

## Homework Set #1.

**Due Date:** Monday October 12, 2009

*Solve the following 6 exercises*

1. Prove for the real Klein-Gordon field that the conserved charge associated with time translations is the Hamiltonian (i.e. prove the last equality in Eq. (2.18) of Peskin & Schroeder)
2. Peskin & Schroeder, Problem 2.1 (a) (Classical Electromagnetism)
3. Peskin & Schroeder, Problem 2.1 (b) (Classical Electromagnetism)
4. Peskin & Schroeder, Problem 2.2 (a) (Complex Scalar Field)
5. Peskin & Schroeder, Problem 2.2 (b) (Complex Scalar Field)
6. Peskin & Schroeder, Problem 2.2 (c) (Complex Scalar Field)