

## 250 Higgs Problems

**Grading:** Unless indicated otherwise, each problem is due one week after it is assigned. Problems handed in up to the day of the class following the class day when the problems were first due will receive 60% credit. After that, no credit. Problems will constitute a sizable (about 50% to 60%) fraction of your final grade.

1. Assigned 4/1/2013; Due 4/8/2013. (20pts)

Verify that equations (19) and (20) lead to equation (21) in the notes.

2. Assigned 4/1/2013; Due 4/8/2013 (10pts)

Verify that the first of Equations (22) is indeed the inverse of the Kernel appearing in Equation (21).

3. Assigned 4/1/2013; Due 4/8/2013 (10pts)

Verify the couplings of the gauge bosons to the Higgs as given diagrammatically below Equation (31).