Week 2 (due Oct. 14)

Reading: Schwartz 26.3-26.6

1. Problem 26.3a (20 pts).

2. Problem 26.3b (20 pts).

3. Problem 26.3c (10 pts).

Feynman rules for scalars are given on pages 510-511. Note that there are two scalar-gluon vertices (eq. 26.13 and eq. 26.14), so there are more diagrams to compute than in the case of fermionic quarks. For example, there are two vacuum polarization diagrams with a scalar loop. In the case of the triple-gluon vertex, don't forget to take into account permutations of the external gluons.