QFT Homework 1 Due 2 Oct 2013

This homework is due in the dropbox outside 2L26 by 11:59PM on the due date. You may instead email a PDF (prepared with LaTeX) to Dr. Frey.

1. **Bhabha Scattering** *Srednicki 59.2*
   Your answer should be given in terms of the electron mass m and the Mandelstam variables.

2. **Gauge Fixing** *Srednicki 62.1*

3. **Gauge Invariance Prevents Divergences** *Srednicki 62.3*
   Hint: You may consider only the divergent parts of the diagrams. Then think about whether the counterterm required for a non-zero divergence is gauge-invariant.