

Week 2 (due April 16)

Reading: sections 66, 67.

1. Problem 66.4. (Check your answer for $\alpha(M_W)$ by consulting "Review of Particle Properties").

2. Problem 66.1.

3. Using the results of problems 1 and 2, solve the RG equation for the electron mass and determine the running mass of the electron $m_e(\mu)$ at the scale $\mu = M_W$, assuming that at the scale $\mu = m_e$ the running mass coincides with the physical mass (they are actually slightly different, but the difference is rather small).