Exercises for lecture 22 (1)

Read the introduction to Schwartz chapter 23 (just the few paragraphs before section 23.1) The general RGE logic is setup and there is a nice historical overview too. Show that one could also get equation 149.1 (the CS equation) from the condition: 2 $\bigwedge_{\mathcal{L}} \frac{\mathcal{L}}{\mathcal{L}} \frac{\mathcal{G}}{\mathcal{L}} = 0$ bare Green function → total derivative Tips: (1) be careful in separating total derivatives from partial ones (2) figure out how to write derivatives of Z as derivatives of η (3) use derivative definitions for the β and γ function $\beta = M \frac{d\lambda}{dM}; \quad \gamma = -M \frac{d\gamma}{dM}$ (which are equivalent to 148.3 and 148.4 in the limit of small variations):