FYS3500 Spring 2024 - Problem set 8

Make sure you have read the relevant chapters in the book and compendium before starting the exercises.

Problem 1 Charged and neutral currents

Martin&Shaw2019 Problem 6.1

Problem 2 Feynman diagrams

Martin&Shaw2019 Problem 6.5.
NB: The text of the exercise is imprecise. It should say "is strongly suppressed" instead of "cannot".

Problem 3 Cabbibo-allowed, Cabbibo-suppressed, and first order forbidden decays

Martin&Shaw2019 Problem 6.8
Hint: Use the Wcs and Wcd vertices to construct selection rules for the change in strangeness S, charm C and hadron charge Q for Cabbibo-allowed and Cabbibo-suppressed decays.

Problem 4 Semileptonic and hadronic decays

Martin&Shaw2019 Problem 6.9

Problem 5 Branching ratios

Martin&Shaw2019 6.10