QFT Homework 5 Due 20 Oct 2022

This homework is due to `https://uwcloud.uwinnipeg.ca/s/Xks9XWXz9yo5CpG` by 10:59PM on the due date. Your file(s) must be in PDF format; they may be black-and-white scans or photographs of hardcopies (all converted to PDF), PDF prepared by LaTeX, or PDF prepared with a word processor *using an equation editor*.

I have listed your name with the problem you will present on 19 Oct. Note that you only need to hand in the "For a Grade" section of problems.

Reading Assignment: Srednicki chapters 11 & 12; Suggested other reading includes Siegel §V.C.1-4,7 (path integral approach) and/or Tong §3.3-6, Coleman §8-9 (Hamiltonian approach)

For a grade Submit your answers for the following questions

1. **Decay Rates** *Srednicki 11.1* Presentation: Naman
2. **Scatterings** *Srednicki 11.4* HINT: Try drawing the Feynman diagrams first. Presentation: Phil

Not to be marked Do not submit your answers for the following questions

3. **Compton Scattering** *Srednicki 11.2 (a,b)* Presentation: Zunaira
4. **Complex Scalar Scattering** Presentation: Bardh

   Find the differential cross section for $\varphi\varphi \to \varphi\varphi$ in the complex scalar theory of Srednicki problem 9.3.