

QFT Homework 2 Due 22 Sept 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 21 Sept. Note that you only need to hand in the first section of problems for a grade.

Reading Assignment: Srednicki chapters 6-8; (Tong §2.7 recommended alternate discussion of propagator)

For a grade Submit your answers for the following questions

1. **Propagator from Contour Integral** *Srednicki 7.1* Presentation: Bardh
2. **Comparing Operators and Path Integrals** *Srednicki 7.3* Presentation: Phil
3. **Forced Harmonic Oscillator** *Srednicki 7.4* Presentation: Naman

You will have to do an integral. You can either do a contour integral argument or by using $\text{Im} \lim_{\epsilon \rightarrow 0} [1/(x \pm i\epsilon)] = \mp \pi \delta(x)$.

4. **Complex Scalar Path Integral** *Srednicki 8.7* Presentation: Zunaira

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

5. **Filling in Blanks** *Srednicki problems 6.1 & 8.1-3*