

PHY 5667 : Quantum Field Theory A, Fall 2014

September 18<sup>th</sup>, 2014

Assignment # 3

(due Thursday October 2<sup>nd</sup>, 2014)

1. Problem 9.5 of Srednicki's book.

**Note:** this problem teaches you how to calculate  $\langle 0|T\phi(x_1)\dots\phi(x_n)|0\rangle$  using canonical quantization. We will briefly discuss this in class on Tuesday, Sep. 23, before moving on to consider path-integral quantization and how to obtain  $\langle 0|T\phi(x_1)\dots\phi(x_n)|0\rangle$  in that context. Since we will assume some of the results of this problem, it could be beneficial for you to have a look at the problem before that lesson.

2. Problems 7.1 and 7.2 of Srednicki's book.
3. Problems 8.1, 8.2, and 8.3 of Srednicki's book.
4. Problem 8.7 of Srednicki's book.