

**Quantum Field Theory I: PHYS 721 (Autumn 2020)**  
**Quick quiz—Thursday, September 10.**

**Instructions**

These quick quizzes are low-stakes assessment tools to help cement your understanding of our material. They will help you remember the key facts and can serve as a study guide to help you focus on material you are less familiar with. These quizzes do not contribute to your grade and are for your own use.

1. **Without looking at your notes or the textbook, and without consulting with your physically-distanced neighbour**, write your answer to each question in the **first column**.
2. After our review and class discussion, answer each question and write your answers to each question in the **second column**. You should complete the second column, but do not add anything to your first column.

There are four questions.

**Question 1**

What is the role of normal ordering?

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**Question 2**

Describe the different propagators that we have defined. Equations are helpful.

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**Question 3**

Describe the Schrödinger and Heisenberg pictures of quantum mechanics.

**Question 4**

Discuss the connection between causality and the existence of antiparticles. Do you find this convincing?

