Writing and Understanding Proofs

Syllabus Outline

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Quantum Formalism (QF) Academy
Incubated by Zaiku Group.

QF's CORE MISSION:
Make Abstract Mathematics Accessible.

Course Introduction

Knowing about methods for constructing proofs is a vital, but often overlooked part of any researcher's journey. In fact, if you didn't study mathematics at university level, it is likely that you were never formally introduced to proof-writing strategies! We aim to remedy this fact with this mini-course, which will give you the tools to be able to write mathematical arguments clearly and precisely, and teach you some of the common methods that you will encounter throughout your time in the QF academy.
As these methods are so ubiquitous in graduate-level mathematical education, this course should be seen as a prerequisite to the other mathematics courses in the academy.

Syllabus Outline

- Part 1 (Types of Proofs): In this first session, you learn about some of the different types of proof that you will encounter throughout your time in the QF academy.
- Part 2 (Existence And Uniqueness Proofs): Learn how to prove 'existence and uniqueness' propositions.
- Part 3 (Implications And Negations): Learn how to negate any proposition by breaking it down into components and applying basic rules.
- Part 4 (Structure, Clarity, And Precision): Cover proof structure, followed by clarity and precision.