

Assignment #7: Quantum Error Correction Codes.

1. (2pt.) Explain the notions of a codeword, a code space, and a coding space in a quantum error correction code (QECC) procedure.
2. (2pt.) How are errors represented in a QECC procedure? Mathematically what do errors do to codewords?
3. (3pt.) In the Toric Code, what is the difference between a "local" operator and a "non-local" operator?
4. (3pt.) What is the difference between an anyon, a fermion, and a boson?