

## 1 | Quantum Computers are not Computers

- Quantum computing is a methodology of understanding mechanics
- Feynman is the first to say that
- Quantum computers are not meant to supplant normal computers: they are not Turing machines
- Quantum computing is meant to explore a new space, instead of overtaking the old space; it allows us to simulate quantum systems
- Trying to fit other quantum systems into the "standard form" of a quantum circuit

Quantum systems are not spanned by the basis of current logic systems. "Maybe we are children."

Feynman & Friends are much more pragmatic than the early quantum physicists; he came up with practical models and theories — doing philosophy without doing it.

## 2 | Simulating a Quantum Computer

We will be pondering this question through the class. "Why can't we use a Turing machine to simulate a quantum computer?"