Chapter 4: Quantum Circuits

John Martinez
john.r.martinez14@gmail.com

1 Quantum Circuits

1.1 Exercise

Give a direct proof that

$$|j\rangle \to \frac{1}{\sqrt{N}} \sum_{k=0}^{N-1} e^{2\pi ijk/N} |k\rangle$$

is unitary.

Solution

∎