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1.1 Introduction Stuff and General Things to Note

Stuff to know

This course will need to know more about qubits and determine their probabilities of ending on a quantum state. Some knowledge of linear algebra to help, *NOT* required.

Texts (where one by Elanor and Wolfgang is going to be most used):

- Quantum Computer Science, by David Mermin
- Quantum Computing: A Gentle Introduction, by Elanor Rieffel and Wolfgang Polak

1.2 Polarization of Photons

These are states

$$\hat{y} \Rightarrow |0\rangle$$
$$\hat{x} \Rightarrow |1\rangle$$

Dot product of

$$\vec{A} * \vec{B} = AB\cos\theta$$
$$\vec{A} * \hat{i} = A * 1 * \cos\theta = A\cos\theta$$

Generally speaking,

$$\vec{A} = (\hat{i} * \vec{A}) * \hat{i} + (\hat{j} + \vec{A} * \hat{j})$$