0.1 notation

$\mathcal{L}$(V,W): Linear map $\mathcal{L}$ from vector spaces V to W

Proof cycle and related stuff

How do I prove this? How do I approach thinking about this in terms of proof; How do I go from this conjecture to thinking; we need to start from things we know to be true and arrive here; this method is known as direct proof; there are other methods too, but a proof generally needs an idea;

1. Understand every term of the proof at a cursory level.
2. Understand what is being asked in those terms?
3. Now you understand the task at this point.
4. Ideate and attempt; sketch out promising avenues that look hopeful.
5. Once you have a promising sketch, write it in better detail.
6. Cycle until you reach a satisfactory proof.
7. Write down ideas while Ideating. Think on paper.

0.1.1 Pauli gates on e_i

0.2 Pauli Gates

Quantum gates are simply operators. But since we are doing quantum computation, we adapt the term gate instead of operators.

$$I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \quad X = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix} \quad Y = \begin{bmatrix} 0 & -i \\ i & 0 \end{bmatrix} \quad Z = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$$

I	X	Y	Z
	bit flip		phase flip
	quantum not		

1 come back to this later

what is the POVM formalism?

1. You use it when you don't care about the post-measurement state.
2. It is an established elegant formation that is adopted by researchers in quantum computation and quantum information.
3. What is the added advantage of a POVM? What exactly is elegant about the formalism?
4. How exactly is the POVM formation used for the analysis of measurements? $\{M_m\}$ satisfy the completeness relation. What else is necessary to go from operator to measurement operator. Does it say, D a) have to be hermitian?