Source:

1 | Axler 3.A source

2 | invariant subspace def

> Suppose $T \in \mathcal{L}(V)$. A subpsace U of V is called *invariant* under T if $u \in U$ implies $Tu \in U$.

2.1 | intuit

A subspace U is called invariant on T if $T\big|_U$ is closed in U. (BUT it is not nessecarily an operator!) Aka the map is closed under the subspace.

2.2 | results

2.2.1 | finite dimensional subspaces of sufficiently large dimension (1 for $\mathbb{F} = \mathbb{C}$ and 2 for $\mathbb{F} = \mathbb{R}$)