

1 | **Axler 5.B Exercise 13**

Suppose W is a complex vector space and $T \in \mathcal{L}(W)$ has no eigenvalues. Prove that every subspace of W invariant under T is either $\{0\}$ or infinite-dimensional.

2 | **Proof**

5.21 states

Every operator on a finite-dimensional, nonzero, complex vector space has an eigenvalue.