

pieces V . But we should not choose these pieces at random: they should be mapped to themselves by T . (5)

Defⁿ: A subspace W of a vector space V is called T -invariant

if $T(W) \subset W$. In other words,

W is T -invariant



$T(w) \in W$ for all $w \in W$

here $T: V \rightarrow V$
is a linear map

This notion should be familiar to you from the homework.

example: given $T: V \rightarrow V$ linear,
 $R(T)$ is a T -invariant subspace
of V

proof: If $x \in R(T)$ then $T(x) \in R(T)$. \square