

Step-1

Let S and T are linear with $S(v) = T(v) = v$.

We have to verify that $S(T(v)) = v$ or v^2 .

Step-2

Now

$$\begin{aligned} S(T(v)) &= S(v) \quad (\text{Since } S(v) = v, \text{ for any } v) \\ &= v \end{aligned}$$

Therefore, $\boxed{S(T(v)) = v}$

And $S(T(v)) \neq v^2$