EXTRA CREDIT QUESTION 2

Let V, W be vector spaces over a field F and $L : V \to W$ be a map. Suppose that L is only known to satisfy one condition in the definition of linear transformation. Namely, L either satisfies $\forall u, v \in V$, $L(u + v) = L(u) + L(v)$ or $\forall a \in F$, $L(au) = aL(u)$. Then is it true that L must be a linear transformation? Why or why not?