

Say M is a right R -module, and we write endomorphisms on the left. Let $\varepsilon_j : M \rightarrow nM$ be the j -th inclusion, and $\pi_i : nM \rightarrow M$ be the i th projection. For any endomorphism $F : nM \rightarrow nM$, let f_{ij} be the composition $\pi_i F \varepsilon_j \in E$. Define a map $\alpha : \text{End}R(nM) \rightarrow Mn(E)$ by $\alpha(F) = (f_{ij})$. Routine calculations show that α is an isomorphism of rings.