

Fix a composition series $0 = M_0 \subset M_1 \subset \cdots \subset M_n = M$ for M . Then $0 = M^K_0 \subset M^K_1 \subset \cdots \subset M^K_n = M^K$ can be refined into a composition series for M^K . Therefore, if $\{V_i\}$ are the composition factors of M , then those of M^K are the composition factors of $\{V^K_i\}$. This gives immediately the “if” part, and the “only if” part is obvious.