

Assume (a). Then we have $1 = \dim_k M_i = n_i \dim_k D_i$, which implies that $n_i = 1$ and $\dim_k D_i = 1$. Therefore, $D_i = k$, and we have $kG \sim k \times \cdots \times k$ (since $\text{rad } kG = 0$ here). Clearly, this gives (b). Conversely, if (b) holds, then $n_i = \dim_k D_i = 1$ for all i , and we have $\dim_k M_i = n_i \dim_k D_i = 1$, as desired.