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Capability of p -nilpotent products of cyclic p -groups.

A group G is capable if and only if there exists a group H such that $G \cong H/Z(H)$, where $Z(H)$ is the center of H . A classic theorem of Baer proves that a nontrivial direct sum of finitely many cyclic p -groups is capable if and only if there are more than one nontrivial cyclic summands and the two largest ones have the same order; the result was extended by the author from the case of the direct sum to the case of the k -nilpotent product, with $k < p$ (the direct sum being the 1-nilpotent product). We prove that the p -nilpotent product of cyclic p -groups is capable if and only if there are more than one cyclic factor, and if the two largest are of order $p^a \leq p^b$, then $b \leq a + 1$. (Received July 11, 2006)