

1064-20-313

Tim Bonner* (tb25@txstate.edu), Department of Mathematics, Texas State University, 601 University Drive, San Marcos, TX 78666. *Normally serially monomial p -groups.*

We define a p -group, P , to be *normally serially monomial*, if the following holds. There exists a single normal series,

$$P = P_0 \geq P_1 \geq \dots \geq P_{n-1} \geq P_n = 1_P,$$

such that $|P_{i-1}/P_i| = p$ for $i \in \{1, \dots, n\}$, and for each $\chi \in \text{Irr}(P)$, there exists P_j with $0 \leq j \leq n$ and $\lambda \in \text{Irr}(P_j)$, such that λ is linear and $\lambda^P = \chi$. We investigate the character theoretic properties of such groups and the relation of the character degrees (and their multiplicities) to the group theoretic structure. Specifically, we show that for $i \in \{1, \dots, n\}$,

$$|\{\chi \in \text{Irr}(P) \mid \chi(1_P) = p^i\}| = \frac{[P_i : P'_i] - [P_i : P'_{i-1}]}{[P : P_i]}.$$

(Received September 13, 2010)