Abstract

The 2-Generator Groups Whose Commutator of the Generators is Central

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We show that all groups of the form

\[ G_{m,n} = \langle x, y \mid x^m = y^n = e, [x, y]^2 = [x, y]^2 = [x, y]^2 \rangle \]

have nilpotency class at most 2, order \( mn \times \text{lcm}(m, n) \) and exponent either \( \text{lcm}(m, n) \) or \( 2\text{lcm}(m, n) \) in the finite case, and consider the infinite case. We also show that in the group \( G_{m,n} \) every cyclic subgroup is conjugate permutable, but not necessarily quasinormal.

Keywords: Groups of the form \( G_{m,n} \).