1026-20-90   **Murray Elder** and **Mark Kambites*** (`Mark.Kambites@manchester.ac.uk`), School of Mathematics, University of Manchester, Manchester, M60 1QD, England, and **Gretchen Ostheimer**. *Groups and Counters.*

We show that a group has word problem accepted by a blind n-counter automaton in the sense of Greibach if and only if it is virtually free abelian of rank n or less; this is in a very precise sense an abelian analogue of the Muller-Schupp theorem. More generally, if G is a virtually abelian group then every group with word problem recognised by a G-automaton is virtually abelian with growth class bounded above by the growth class of G. (Received February 16, 2007)

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