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AMERICAN MATHEMATICAL MONTHLY PROBLEM

11231. *Proposed by Christopher Hillar, Texas A&M University, College Station, TX.* Find a non-Abelian group G with the following property: for each n , every word W on the alphabet of $n+1$ letters A_1, \dots, A_n , and X , all lists a_1, \dots, a_n of elements of G , and every b in G there exists a unique x in G such that $W(a_1, \dots, a_n, x) = b$. (Thus, in particular, $ax^2ax = b$ must have a unique solution x .)