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ON THE GROUP $GL(2, R[X])$*

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Abstract. Suppose that G is an arbitrary group and S is its subset such that $S^{-1} = S$. Let $gr(S)$ be the subgroup of G generated by S. Denote by $l_S(g)$ the length of element $g \in gr(S)$ relative to the set S. Let V be a finite subset of a free group F of countable rank and let the verbal subgroup $V(F)$ be a proper subgroup of F. For an arbitrary group G, denote by $\overline{V}(G)$ the set of values in the group G of all the words from the set V. The present paper establishes the infinity of the set $\{l_S(g),\ g \in V(G)\}$, where $G = GL(2, R[x])$, $S = \overline{V}(G) \cup \overline{V}(G)^{-1}$ for an arbitrary field R.

Key words. Verbal subgroup, Width of verbal subgroup, Pseudocharacter.

AMS subject classifications. 20E06, 20F22

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