



**ON THE STRUCTURE OF SOME GROUPS  
CONTAINING  $L_2(7)$  wr  $PSL(3, 3)$**

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**Abstract**

In this paper, we generate the wreath product  $L_2(7)$  wr  $PSL(3, 3)$  using only two permutations. Also, we show the structure of some groups containing the wreath product  $L_2(7)$  wr  $PSL(3, 3)$ . The structure of the groups founded is determined in terms of wreath product  $(L_2(7)$  wr  $PSL(3, 3))$  wr  $C_k$ . Some related cases are also included. Also, we show that  $S_{91k+1}$  and  $A_{91k+1}$  can be generated using the wreath product  $(L_2(7)$  wr  $PSL(3, 3))$  wr  $C_k$  and a transposition in  $S_{91k+1}$  and an element of order 3 in  $A_{91k+1}$ . We also show that  $S_{91k+1}$  and  $A_{91k+1}$  can be generated using the wreath product  $L_2(7)$  wr  $PSL(3, 3)$  and an element of order  $k + 1$ .

**Keywords and phrases:** wreath product, linear group.

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