



**ON THE WREATH PRODUCT OF GROUP  $L_2(9) \text{ wr } PSL(2, 17)$   
BY SOME OTHER GROUPS**

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**Abstract**

In this paper, we generate the wreath product  $L_2(9) \text{ wr } PSL(2, 17)$  using only two permutations. We show the structure of some groups containing the wreath product  $L_2(9) \text{ wr } PSL(2, 17)$ . The structure of the group constructed is determined in terms of wreath product  $(L_2(9) \text{ wr } PSL(2, 17)) \text{ wr } C_k$ . Some related cases are also included. Also, we show that  $S_{170k+1}$  and  $A_{170k+1}$  can be generated using the wreath product  $(L_2(9) \text{ wr } PSL(2, 17)) \text{ wr } C_k$  and a transposition in  $S_{170k+1}$  and an element of order 3 in  $A_{170k+1}$ . We also show that  $S_{170k+1}$  and  $A_{170k+1}$  can be generated using the wreath product  $L_2(9) \text{ wr } PSL(2, 17)$  and an element of order  $k + 1$ .

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