

1035-20-156

**M. R. Darafsheh\*** (darafsheh@ut.ac.ir), School of Mathematics, College of Science, University of Tehran, 14714 Tehran, Tehran, Iran. *On recognition property of the projective special linear group over  $GF(3)$ .*

Let  $P$  be a finite group and denote by  $\omega(P)$  the set of its element orders.  $P$  is called  $k$ -recognizable by the set of its element orders if there are  $k$  isomorphic classes of finite groups  $G$  with the property  $\omega(G) = \omega(P)$ . Usually a 1-recognizable group is called a recognizable group.

In this research we will consider the recognition property of the simple groups  $PSL_p(3)$  and  $PSL_{p+1}(3)$ , where  $p$  is an odd prime number. Under this condition the mentioned groups have disconnected prime graphs, hence a theorem of Gruenberg and Kegel can be applied to find the structure of the group  $G$ . In particular we will show that the group  $PSL_7(3)$  is 2-recognizable and  $PSL_8(3)$  is a recognizable group. (Received August 02, 2007)