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**Mark L. Lewis** and **Donald L. White\*** ([white@math.kent.edu](mailto:white@math.kent.edu)), Department of Mathematical Sciences, Kent State University, Kent, OH 44242. *Nonsolvable groups with no prime dividing three character degrees.*

We consider nonsolvable finite groups  $G$  with the property that no prime divides at least three distinct character degrees of  $G$ . We first show that if  $S \leq G \leq \text{Aut}S$ , where  $S$  is a nonabelian finite simple group, and no prime divides three degrees of  $G$ , then  $S \cong \text{PSL}_2(q)$  with  $q \geq 4$ . Moreover, in this case, no prime divides three degrees of  $G$  if and only if  $G \cong \text{PSL}_2(q)$ ,  $G \cong \text{PGL}_2(q)$ , or  $q$  is a power of 2 or 3 and  $G$  is a semidirect product of  $\text{PSL}_2(q)$  with a certain cyclic group.

More generally, we give a characterization of nonsolvable groups with no prime dividing three degrees. Using this characterization, we conclude that any such group has at most 6 distinct character degrees, extending to the nonsolvable case the analogous earlier result of D. Benjamin for solvable groups. (Received August 30, 2010)