1064-20-83 **Mark L. Lewis** and **Donald L. White*** (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 $S \leqslant G \leqslant \mathrm{Aut}S$, where S is a nonabelian finite simple group, and no prime divides three degrees of G, then $S \cong \mathrm{PSL}_2(q)$ with $q \geqslant 4$. Moreover, in this case, no prime divides three degrees of G if and only if $G \cong \mathrm{PSL}_2(q)$, $G \cong \mathrm{PGL}_2(q)$, or q is a power of 2 or 3 and G is a semidirect product of $\mathrm{PSL}_2(q)$ 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)