Examples of Nonpronormal Relatively Maximal Subgroups of Finite Simple Groups

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Abstract—Using R. Wilson's recent results, we prove the existence of triples $(\mathfrak{X}, G, H)$ such that $\mathfrak{X}$ is a complete (i.e., closed under taking subgroups, homomorphic images, and extensions) class of finite groups, G is a finite simple group, and H is its $\mathfrak{X}$-maximal subgroup nonpronormal in G. This disproves a conjecture stated earlier by the second author and W. Guo.

Keywords: complete class of groups, relatively maximal subgroup, pronormal subgroup, finite simple group.

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