1062-05-142 **Thomas W. Tucker*** (ttucker@colgate.edu), Colgate University, Hamilton, NY 13346. *The distinguishing chromatic number of a map.*

Given a map M without loops or multiple edges, the distinguishing chromatic number $DC(M)$ is the least number of colors needed to properly color the vertices of M so that the only color-preserving automorphism of M is the identity. Let $C(M)$ denote the usual chromatic number of the graph underlying M, and let $D(M)$ denote the distinguishing number of M, where vertex-colorings are not required to be proper. For graphs, $C(K_{m,n}) = 2$ while $DC(K_{m,n}) = m + n$, so the difference between the parameters C and DC can be arbitrarily large. For maps this is not the case. It is shown that $DC(M) \leq C(M) + 3$, with equality for only finitely many maps. If $g > 0$ is fixed, there are only finitely many maps M of genus g with $DC(M) > C(M) + 1$. For planar maps, $DC(M) \leq 6$ with equality for only finitely many maps. Proofs are complicated and depend on the author's work on the distinguishing number $D(M)$. (Received August 04, 2010)