1003-Z1-63 **Robert E. Greene***, Department of Mathematics, UCLA, Los Angeles, CA 90095. *Orbifolds, Regular Solids, and the Hurwitz 84(g-1) Theorem.*

The Hurwitz Theorem gives an upper bound on the number of automorphisms(biholomorphic self-mappings) of a compact Riemann surface of genus g>1: there are at most 84(g-1) automorphisms. This result is often treated as a truly complex analytic matter, involving Weierstrass points and so on. In this talk, using the viewpoint of orbifolds and in particular of the Gauss-Bonnet Theorem for surfaces with cone-point singularities, this estimate on the number of automorphisms will be exhibited as a result of pure geometry, closely related to the familiar fact that there are precisely five regular solids. The talk is intended to be self contained, outside of a presumed familiarity with basic differential geometry of surfaces. (Received July 28, 2004)