

1108-14-129

S. Allen Broughton* (brought@rose-hulman.edu), Department of Mathematics, Rose-Hulman Institute of Technology, 5500 Wabash Ave, Terre Haute, IN 47803. *Quasi-platonic actions of $PSL(2, q)$ and their dessins*. Preliminary report.

A quasi-platonic action of the group G on the Riemann surface S is a conformal action of G on S such that S/G is a sphere and the projection $S \rightarrow S/G$ is branched over three points. In this talk we describe the quasi-platonic actions of $PSL(2, q)$. Quasi-platonic actions are interesting since each surface with a quasi-platonic action must have a defining equation with coefficients in a number field. Additionally, each quasi-platonic action defines a regular *dessin d'enfant* on S , namely an embedded bipartite graph whose complement is a collection of rotationally symmetric, hyperbolic polygons. The group G is an automorphism group of the dessin. The absolute Galois group acts on the set of all dessins by acting on the coefficients of the defining equation of S . We discuss the Galois action on the dessins arising from quasi-platonic actions of $PSL(2, q)$. (Received January 07, 2015)