

Meeting: 1001, Evanston, Illinois, SS 22A, Special Session on Special Functions, Orthogonal Polynomials, and their Applications

1001-11-412 **Stephen C. Milne*** (milne@math.ohio-state.edu), Department of Mathematics, The Ohio State University, 231 West 18th Avenue, Columbus, OH 43210-1174. *A new formula for 9 squares and Humbert's class number formulas.* Preliminary report.

Utilizing classical elliptic function invariants and Humbert's classical generating functions for class numbers, we sketch our derivation proof of our new explicit formula for 9 squares. This formula first arose in our work in multiple basic hypergeometric series and certain infinite families of identities. We also discuss direct connections of this work with four Lambert series identities of Ramanujan. (Received August 31, 2004)