1067-14-848 **Harlan Kadish*** (hmkadish@umich.edu), Department of Mathematics, 2074 East Hall, 530 Church Street, Ann Arbor, MI 48109. *Counting Generating Invariants for the Action of a Semisimple Group.*

Although degree bounds for the generators of various invariant rings have been known for almost a century, little is said about the cardinality of minimal generating sets. Estimates of such would provide lower bounds for the asymptotic complexity of algorithms that compute invariants. For a semisimple group G, choose an irreducible representation of highest weight λ, and consider the irreducible representations of highest weight $n\lambda$. As n goes to infinity, we show that the cardinality of a minimal set of generating invariants grows faster than any polynomial in n. When SL_2 acts on the binary forms of degree n, we show that the minimal set grows faster than any polynomial in d, and we provide combinatorial evidence that the growth is likely sub-exponential. (Received September 15, 2010)