MR0447230 (56 #5545)   14B05
Riemenschneider, Oswald
Die Invarianten der endlichen Untergruppen von $\mathrm{GL}(2, \mathbf{C})$**.**
Math. Z. **153** (1977), *no. 1,* 37–50.

Let G be a finite subgroup of $\mathrm{GL}(2, \mathbf{C})$. G acts in a canonical way on $\mathbf{C}[u, v]$. The object of this paper is to find, for any such G, a minimal set of generators of the ring of G-invariant polynomials $\mathbf{C}[u, v]^G$ and then to find a minimal set of generators for the relations between the invariant polynomials (this second step is only carried out in certain cases, the author claiming that the remaining cases present no added difficulties). One may assume that G contains no reflectons, in which case one can list the conjugacy classes of such groups rather easily.

Three results permit the author to reduce the problem to a rather straightforward computation: (1) M. Artin's computation of the embedding dimension of a rational singularity from its resolution [Amer. J. Math. **88** (1966), 129–136; MR0199191]; (2) E. V. Brieskorn's determination of the resolution of Spec $(\mathbf{C}[u, v]^G)$ for any G as above [Invent. Math. **4** (1967/68), 336–358; MR0222264]; (3) J. Wahl's computation of the minimal number of equations for any rational singularity [Ann. Sci. École Norm. Sup. (4) **10** (1977), no. 2, 231–263; MR0444655].

Some cases had been treated previously by the author and K. Behnke.

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