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Thomas R. Hagedorn* (hagedorn@tcnj.edu), Department of Mathematics and Statistics, The College of New Jersey, P.O. Box 7718, Ewing, NJ 08628. *On Computing A Minimal Generating Set of Covariants for a Binary Form of Degree 10*. Preliminary report.

One of the central problems in 19th century algebra was determining the minimal number of generators for the ring of invariants (resp. covariants) for a binary form of degree n . Hilbert famously showed that the ring was finitely generated, but the minimal number of generators needed for invariants (resp. covariants) was only known for $n \leq 8, n \neq 7$ (resp. $n \leq 6$) until recently. Bedratyuk (2007) has extended these calculations to $n \leq 8$ in both cases. We have verified these calculations and report on progress for the case $n = 10$. (Received September 20, 2007)