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Manfred Minimair* (mminima@math.ncsu.edu), Department of Mathematics, North Carolina State University, Raleigh, NC 27695. *Macaulay Resultant of Composed Polynomials.*

The main question of this paper is: What is the Macaulay resultant of composed polynomials? By a composed polynomial $f \circ (g_1, \dots, g_n)$, we mean the polynomial obtained from a polynomial f in the variables y_1, \dots, y_n by replacing y_j by some polynomial g_j . Cheng, McKay and Wang and Jouanolou have provided answers for two particular subcases. The main contribution of this paper is to complete these works by providing a uniform answer for all subcases. In short, it states that the Macaulay resultant is the product of certain powers of the Macaulay resultants of the component polynomials and of some of their leading forms. It is expected that these results can be applied to compute Macaulay resultants of composed polynomials with improved efficiency. We also state a lemma of independent interest about Macaulay resultant under vanishing of leading forms. (Received September 19, 2000)