1116-34-624 **G. Edgar Parker*** (parkerge@jmu.edu), 1106 Foxfire Drive, Greensboro, NC 27410. *Some Algebraic Considerations for P.*

P, the set of real analytic functions each of which is the solution to a differential equation with a polynomial (possibly on Rn) generator and containing 0 in its domain, is a proper subset of the real analytic functions and elements of P are numerically accessible in very robust ways. In addition, if one is willing to ignore "the domain issue", P is closed under function addition, function multiplication, and, when it makes sense, composition. In this talk, we present a representation that provides an isomorphism of + and *, and a structure preserving map for composition. The representation involves equivalence classes and the question of identifying members of the same equivalence class by algebraic, rather than analytic, means is posed. Also, the structure identified by The Intersecting Coset Theorem will be discussed in purely algebraic terms. Progress on either of these problems would promise analytic, and consequently, computational, payoffs. (Received September 09, 2015)