S. B. Mulay* (mulay@math.utk.edu). Polynomials preserving infinite subsets upto M-equivalence.

Let R be an integral domain, E an infinite subset of R and f a non-constant uni-variate polynomial with coefficients in R. If the m-adic closures of E and f(E) coincide for all maximal ideals of R, then E is said to be M-equivalent to f(E). When R is "arithmetic" in nature the M-equivalence of E and f(E) is possible only when f is of degree one. As a crollary the known results about fully invariant sets of polynomials can be deduced in a concise andgeneralized manner. Also, this answers a question posed by Gilmer and Smith regarding polynomial equivalence of E and f(E). (Received August 17, 2005)