

1096-VO-2232 **Edward Early*** (edwarde@stedwards.edu), St. Edward's University, 3001 S Congress Ave,
Austin, TX 78704. *Decent Polynomials*. Preliminary report.

A polynomial of degree n with integer coefficients is called *nice* if it has integer roots and all of its derivatives have integer roots, for a total of $\frac{n^2+n}{2}$ distinct integers. Since nice polynomials have not been found in degrees higher than 3, we search instead for *decent* polynomials, where only the polynomial and its first derivative must possess $2n - 1$ distinct integer roots. This leads to some examples in degree 4 related to sums of squares, and a tantalizing system of Diophantine equations for degree 6. (Received September 17, 2013)