

On the Span of Polynomials with Integer Coefficients

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Abstract

Following a paper of R. Robinson, we classify all hyperbolic polynomials in one variable with integer coefficients and span less than 4 up to degree 13, and with some additional hypotheses, up to the degree 17. We conjecture that the classification is also complete for the degrees 14, 15, 16, and 17.

Besides improving on the method used by Robinson, we develop new techniques that turn out to be of some interest.

A close inspection of the polynomials thus obtained shows some properties deserving further investigations.