

1096-12-1062

T. Alden Gassert* (gassert@math.umass.edu), Lederle Graduate Research Tower, Department of Mathematics and Statistics, 710 N. Pleasant St, Amherst, MA 01003. *Chebyshev action on finite fields.*

Given a polynomial ϕ and a finite field \mathbb{F}_q one can construct a directed graph where the vertices are the values in the finite field, and emanating from each vertex is an edge joining the vertex to its image under ϕ . When ϕ is a Chebyshev polynomial of prime degree, the graphs display an unusual degree of symmetry. In this paper we provide a complete description of these graphs, and then use these graphs to determine the decomposition of primes in the Chebyshev radical extensions. (Received September 12, 2013)