

Reversed Dickson polynomials of the third kind

Neranga Fernando, Northeastern University

Let p be a prime and $q = p^e$. We discuss the properties of the reversed Dickson polynomial $D_{n,2}(1, x)$ of the third kind. We also give several necessary conditions for the reversed Dickson polynomial $D_{n,2}(1, x)$ of the third kind to be a permutation of \mathbb{F}_q . In particular, we give explicit evaluation of the sum $\sum_{a \in \mathbb{F}_q} D_{n,2}(1, a)$.

Keywords: Finite field, Permutation polynomial, Reversed Dickson polynomial