Cyclic functions and polynomials in the Dirichlet space

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ABSTRACT: A function f is said to be cyclic in the Dirichlet space D if its polynomial multiples span a dense subspace of D. For functions f in D we study how to determine constructively the optimal polynomials p_n of degree n, in terms of the norm of $p_n f - 1$, concentrating on the case when f is a cyclic function. We then give upper and lower bounds for the ratio of convergence of this norm to zero as n goes to ∞.