1125-11-756   **Karl Dilcher*** (`dilcher@mathstat.dal.ca`), Department of Mathematics & Statistics, Dalhousie University, Halifax, NS B3H 4R2, Canada, and **Sinai Robins**. *Zeros and irreducibility of gcd-polynomials.*

We study the family of self-inversive polynomials of degree n, whose jth coefficient is $\gcd(n,j)^k$, for each fixed integer $k \geq 1$. We prove that these polynomials have all of their roots on the unit circle, with uniform angular distribution. In the process we prove some new results on Jordan's totient function. We also prove that these polynomials are irreducible, apart from an obvious linear factor, whenever n is a power of a prime, and conjecture that this holds for all n. (Received September 10, 2016)