Jiří Klaška and Ladislav Skula The Cubic Character of the Tribonacci Roots, Fibonacci Quart. **48** (2010), no. 1, 21–28.

Abstract

If τ is any root of the Tribonacci polynomial $t(x) = x^3 - x^2 - x - 1$ in the Galois field \mathbb{F}_p where p is a prime, $p \equiv 1 \pmod{3}$, then

$$\tau^{\frac{p-1}{3}} \equiv 2^{\frac{2(p-1)}{3}} \pmod{p}$$

More generally, if χ is a root of t(x) in any field extension \mathbb{G} of \mathbb{F}_p , then 2χ is a cubic residue of the field \mathbb{G} .