On critical values of polynomials with real critical points

Hinkkanen A., Kayumov I.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Let f be a polynomial of degree at least 2 with f(0)=0 and f′(0)=1. Suppose that all the zeros of f′ are real. We show that there is a zero ζ of f′ such that $\{pipe\}$ f(ζ)/$\zeta$$\{pipe\}$ ≤ 2/3, and that this inequality can be taken to be strict unless f is of the form f(z)=z+cz3. © 2009 Springer Science+Business Media, LLC.

Keywords

Critical points, Critical values, Polynomials, Smale's conjecture