

Critical points of logarithmic derivatives

Let f be a real polynomial. It is conjectured that the number of *real* zeros of $(f'/f)'$, does not exceed the number of *non-real* zeros of f .

Craven, Csordas and Smith [1] attribute this question to Gauss. It is easy to show that the statement is true when the number of non-real zeros of f is 0 or 2. But nothing seems to be known beyond this.

T. Craven, G. Csordas and W. Smith, The zeros of derivatives of entire functions and the Pólya–Wiman conjecture. *Ann. of Math.* 125 (1987) 405–431.