

On the Casas-Alvero conjecture

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This will be a short talk about the following elementary-sounding problem: suppose that f is a complex univariate polynomial of degree n such that for every $i = 1, \dots, n - 1$, the i -th derivative of f has a zero in common with f . Is f then necessarily the n -th power of a linear polynomial? Eduardo Casas-Alvero conjectured that this is, indeed, the case. Recently Hans-Christian Graf von Bothmer, Oliver Labs, Josef Schicho, and Christiaan van de Woestijne proved that it is true whenever n is a prime power or 2 times a prime power, and I will explain their result. Except for the fact that this shows that it is true for infinitely many n , the conjecture remains widely open.