Basu, Soham; Velleman, Daniel J.
On Gauss’s first proof of the fundamental theorem of algebra. (English) [Zbl 1391.30002]

Summary: Carl Friedrich Gauss is often given credit for providing the first correct proof of the fundamental theorem of algebra in his 1799 doctoral dissertation. However, Gauss’s proof contained a significant gap. In this paper, we give an elementary way of filling the gap in Gauss’s proof.

MSC:

30-03 History of functions of a complex variable
30C15 Zeros of polynomials, rational functions, and other analytic functions of one complex variable (e.g., zeros of functions with bounded Dirichlet integral)
12D10 Polynomials in real and complex fields: location of zeros (algebraic theorems)
01A50 History of mathematics in the 18th century

Full Text: DOI arXiv

References:


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