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Generalization of Some Inequalities for Rational Functions with Prescribed Poles

Preeti Gupta* and Sunil Hans

Department of Applied Mathematics, Amity University, Noida-201313, India

*Corresponding author's e-mail: preity8315@gmail.com

ABSTRACT

The main objective of this paper is to establish the modulus of derivative of rational functions r(z) having all its zeros in $|z| \leq k \leq 1$ except t zeros of order $\alpha_1, \alpha_2, \ldots\ldots, \alpha_t$ respectively and some other related inequalities. Besides generalizing and sharpening some well-known inequalities for the derivative of rational functions with prescribed poles, the obtained results also refine some polynomial inequalities.

Keywords: Rational functions; Inequalities; Polar derivative

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