

ON THE DERIVATIVE OF A RATIONAL POLYNOMIAL WITH PRESCRIBED POLES

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Abstract. Let $p(z) = \sum_{v=0}^n a_v z^v$ be a polynomial of degree n and $W(z) = \prod_{v=1}^n (z - a_i)$, where $|a_i| > 1$, $j = 1, 2, \dots, n$. If $r(z) = p(z)/W(z)$ be a rational function does not vanish in $|z| > 1$. The aim of this paper is to obtained some generalization of an inequality due to Xin Li, R. N. Mohapatra and R.S. Rodriguez [Inequality (12), J. London Math. Soc. 51 (20), 1995, pp. 523–531] for the polynomial $r(z)$ having all its zeros in $|z| \leq k$ and other related results.

Mathematics subject classification (2020): 30A15, 30C10, 26D07.

Keywords and phrases: Rational function, derivative, zeros, poles.

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