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REFINEMENT OF SOME GENERALIZED POLYNOMIAL INEQUALITIES

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Abstract: Let $p(z)$ be a polynomial of degree n,with $p(z) = \sum_{\nu=0}^{n} a_\nu z^\nu$. In this paper, firstly, we prove a result for bounds in two different radii for the maximum modulus of lacunary type of polynomials having all zeros outside a disk of given radius. Next, we establish a result concerning the maximum modulus of polar derivative of polynomial having all zeros inside a disk out of which some fixed number of zeros are centred at origin. In particular case this result reduces into ordinary derivative. Our results not only provide refinements of earlier proved results but also open new avenues for other results in the same field of research.

Keywords and Phrases: Polynomials; Derivatives; Polar Derivative; Inequalities; Maximum Modulus; Zeros.

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