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Rate of growth of polynomials not vanishing inside a circle. (English summary)

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Summary: "A well-known result due to N. C. Ankeny and T. J. Rivlin [Pacific J. Math. **5** (1955), 849–852; MR0076020] states that if $p(z) = \sum_{v=0}^{n} a_v z^v$ is a polynomial of degree n satisfying $p(z) \neq 0$ for $|z| < 1$, then for $R \geq 1$,

$$\max_{|z|=R} |p(z)| \leq \frac{R^n + 1}{2} \max_{|z|=1} |p(z)|.$$

The problem of obtaining an inequality analogous to this inequality for polynomials having no zeros in $|z| < K,\ K > 0$ was proposed by the late Professor R. P. Boas, Jr. In this paper, we obtain some results in this direction, by considering polynomials of the form $p(z) = a_0 + \sum_{v=t}^{n} a_v z^v,\ 1 \leq t \leq n$, which have no zeros in $|z| < K,\ K \geq 1$."