

1109-30-59

**Eze R. Nwaeze\*** (ern0002@auburn.edu), Department of Mathematics and Statistics, Auburn University, Auburn, AL 36849, and **Narendra K. Govil**, Department of Mathematics and Statistics, Auburn University, Auburn, AL 36849. *Growth of Polynomials not vanishing inside a circle*. Preliminary report.

Let  $p(z) = a_0 + a_1z + a_2z^2 + a_3z^3 + \cdots + a_nz^n$  be a polynomial of degree  $n$ , where the coefficients  $a_k$  may be complex. A well-known theorem of Rivlin states that if  $p(z) \neq 0$  for  $|z| < 1$ , then  $\max_{|z|=r} |p(z)| \geq \left(\frac{1+r}{2}\right)^n \max_{|z|=1} |p(z)|$  for  $r \leq 1$ . We improve on this result and give also analogous inequality for polynomials with gaps. A special case of our result amounts to the above result due to Rivlin. (Received January 19, 2015)