1032-42-14 **Mohammed A. Qazi*** (qazima@aol.com), Department of Mathematics, Tuskegee University, Tuskegee, AL 36088, and **Q. I. Rahman**, Dept de Mathematiques et de Statistique, Universite de Montreal, Montreal, Quebec H3C 3J7, Canada. *Extensions of an Inequality for Real Trigonometric Polynomials.*

It was shown by P. Erdős that if t is a *real* trigonometric polynomial of degree n such that $|t(x)| \leq 1$ for all real x, then the arc-length of its graph on any interval of length 2π cannot exceed that of $\cos nx$. This result was generalized by A.P. Calderon and G. Klein who proved that $\int_{-\pi}^{\pi} \varphi\left(|t'(x)|\right) \mathrm{d}x \leq \int_{-\pi}^{\pi} \varphi\left(|-n \sin nx|\right) \mathrm{d}x$ if $\varphi : [0\,,\,\infty) \to \Re$ is such that $\left(\varphi(u) - \varphi(0)\right)/u$ is a non-decreasing function of u on $(0\,,\,\infty)$. In particular, for any a, the integral $\int_a^{a+2\pi} |t'(x)|^p \,\mathrm{d}x$ cannot be larger than the corresponding integral for $t(x) := \cos nx$, if $p \geq 1$. We note that the restriction on p in this result can be relaxed. In addition, we formulate and prove an extension of the theorem of Calderon and Klein to non-periodic entire functions of exponential type. (Received June 17, 2007)