Zbl 273.41012
Erdős, Paul; Reddy, A.R.
A note on rational approximation. (In English)
Period. Math. Hung. 6, 241-244 (1975). [0031-5303]

Let

$$\lambda_{0,n} \equiv \inf_{p\in\pi_n} \left| \frac{1}{f(x)} - \frac{1}{p(x)} \right|_{L^\infty[0,\infty)},$$

where π_n denots the class of all polynomials of degree at most n. Then the authors prove the following. i) There is a sequence $\{g(n)\}_{n=0}^{\infty}$ and an entire function f of infinite order so that for infinitely many n, $\lambda_{0,n} \le l/g(n)$. (ii) Let $f(z) = \sum_{k=0}^{\infty} a_k z^k$, $a_0 > 0$, $a_k \ge 0$, $(k \ge 1)$ be an entire function of finite lower order β. Then for each $\epsilon > 0$,

$$\lim_{n\to\infty} \inf(\lambda_{0,n})^{1/n} \le \exp\left(\frac{-1}{(\beta+\epsilon)(e+1)}\right).$$

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Classification:
41A20 Approximation by rational functions
41A50 Best approximation
41A25 Degree of approximation, etc.