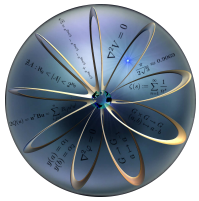

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Runge's theorem

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Let K be a compact subset of $\mathbb{C}$, and let E be a subset of $\mathbb{C}_\infty = \mathbb{C} \cup \{\infty\}$ (the extended complex plane) which intersects every connected component of $\mathbb{C}_\infty - K$. If f is an analytic function in an open set containing K, given $\varepsilon > 0$, there is a rational function $R(z)$ whose only poles are in E, such that $|f(z) - R(z)| < \varepsilon$ for all $z \in K$.