

An Infinite Product

Problem 03-004, by ANTHONY A. RUFFA (Naval Undersea Warfare Center Division, Newport, RI).

Evaluate the infinite product

$$\prod_{n=1}^{\infty} \frac{e^{2^{-n}} + 1}{z^{2^{-n}} + 1}$$

in terms of elementary functions.

Status. The proposer has a solution. Other solutions are invited.