

On expressible sets for products

For a sequence of real numbers $\{a_n\}_{n=1}^{\infty}$ we call

$$E_{\Pi}\{a_n\}_{n=1}^{\infty} = \left\{ \prod_{n=1}^{\infty} \left(1 + \frac{1}{a_n c_n} \right) : c_n \in \mathbb{Z}^+ \right\}$$

its Π -expressible set. In this paper we calculate $E_{\Pi}\{a_n\}_{n=1}^{\infty}$ under various hypothesis on $\{a_n\}_{n=1}^{\infty}$. Where this is not possible we give some partial information on its contents. This investigation can be considered a continuation of related investigations on the Σ -expressible sets of sums.