

EXERCISES 1

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Consider

$$\chi(n) = \begin{cases} (-1)^{\frac{n-1}{2}} & \text{if } n \text{ is odd,} \\ 0 & \text{if } n \text{ is even.} \end{cases}$$

(1) Find the functional equation for

$$L(s, \chi) = \sum_{n=1}^{\infty} \frac{\chi(n)}{n^s}.$$

(2) Find ξ_L such that $\xi(s) = \xi(1-s)$.

(3) Compute the first 10 zeros of $L(s, \chi)$.