

REMARK: The exercise should start in this page.

1.– Consider the following power series:

$$\sum_{n=1}^{\infty} a_n x^n; \quad a_n = \cosh(n)$$

- a) Determine the radius and interval of convergence.
- b) Find the sum of the series.

2.— Let \mathbb{C} be the set of complex numbers.

- a)** Given $z \in \mathbb{C}$, find all complex numbers \hat{z} such that some of the n th roots of z are also n th roots of \hat{z} .
 - b)** Solve the equation $z^3 \bar{z} + 1 = 0$.
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