

Exercises

24.17 [1V9] Note: exercise 1, June 7th 2010.

Prove that there exists one and only one continuous function f on the interval $[-1, 1]$ such that

$$f(x) = 1 + \frac{x}{2}f(x^2) \quad \forall x \in [-1, 1] \quad .$$

Prove that f is representable as a power series centered at zero; and that the radius of convergence is one.

Solution 1. [1VB]