

408L CLASS PROBLEMS

APRIL 22ND, 2020

Problem 1. Express $\frac{x}{x^2+1}$ as a power series.

Problem 2. Express $\log(1-x)$ as a power series (hint: $\log(1-x) = -\int \frac{dx}{1-x}$).

Problem 3. Using partial fractions, find a power series expression for $\frac{-2x+3}{x^2-3x+2}$.

Problem 4. Evaluate $\sum_{n=0}^{\infty} \frac{n}{2^n}$.