

高微第五週作業

Rudin : p.196 # 1, 2, 3 .

Extra problems :

- (a) Show that if $\sum_{n=1}^{\infty} a_n$ converges then $\sum_{n=1}^{\infty} a_n x^n$ converges uniformly on $[0,1]$.
(b) Use (a) to give another proof of Abel's theorem.
- If $a_n \geq 0$ and if $\lim_{x \rightarrow 1^-} \sum_{n=1}^{\infty} a_n x^n$ exists and equals to A , prove that $\sum_{n=1}^{\infty} a_n$ converges and has sum A .