

MATH 2250, Fall 2010.
Homework assignment, Sept. 3, 2010

1. p. 15, # 3
2. p. 108, #1, 2
3. p. 108, # 7
4. Assuming that the series,

$$f(z) := \sum_{n=1}^{\infty} a_n z^n, \quad g(z) := \sum_{n=0}^{\infty} b_n z^n$$

converge for all $|z| < R$, show that

$$f(z)g(z) = \sum_{n=0}^{\infty} \left(\sum_{k=0}^n a_k b_{n-k} \right) z^n$$

where the series converge for all $|z| < R$.