

COMPLEX ANALYSIS, HW # 3

Chapter 3, problems 9, 13, 21, 24, 30, 37, and this problem:

Problem 1.

Find the radius of convergence R_1 of the series

$$\sum_{n=0}^{\infty} \frac{z^n}{n^2}$$

and show the series converges uniformly on $D(0, R_1)$. What is the radius of convergence R_2 of the derivative of this series? Does it converge uniformly on $D(0, R_2)$?