

GENERALISED RELATIVE FIX POINTS OF k -ITERATED FUNCTIONS OF CLASS II

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Abstract: Introducing the idea of generalised relative iterations of k functions of class II, we extend a theorem on fix point involving exact order.

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1. Introduction and Definitions

Let $f(z)$ be a single valued function of the complex variable z . Then $f(z)$ is said to belong to (i) class I if $f(z)$ is entire transcendental, (ii) class II if it is regular in the complex plane punctured at a, b ($a \neq b$) and has an essential singularity at b and a singularity at a and if $f(z)$ does not assume the values a and b anywhere in the complex plane except possibly at the point a .

For simplicity we take $a = 0$ and $b = +\infty$.

The functions $f_n(z)$ of $f(z)$ are defined by

$$f_0(z) = z \text{ and } f_{n+1}(z) = f(f_n(z)) \text{ for } n = 0, 1, 2, \dots$$