

ON THE EXISTENCE OF GENERALISED FIX POINTS OF
FUNCTIONS OF CLASS II

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Abstract: Introducing the idea of generalised iterations of three functions we prove fixed point theorem for functions of class II to generalise some earlier results.

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1. Introduction

A single valued function $f(z)$ is said to belong to class I if $f(z)$ is entire transcendental and 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 $f(z)$ omits the values a and b except possible at a .

To normalise the functions in class II we take $a = 0$ and $b = \infty$.

The iterations of the complex function $f(z)$ are defined by

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