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COMMON FIXED-POINTS OF RATIONAL CONTRACTIONS IN SUPERMETRIC SPACES

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Abstract: In this study, we prove a common fixed-point theorem for generalized rational-type contraction in supermetric space. Our findings expand the contractions of metric spaces to a supermetric space through Kannan's contraction, Reich's contraction, and Dass-Gupta's rational contraction. These theorems also extend to the supermetric context and generalize many interesting results from metric fixed-point theory. Additionally, we provide an example to elucidate our theorems.

Keywords and Phrases: Fixed point, iterative methods, contraction, rational contraction, super-metric space.

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1. Introduction

A fixed point of a function is a point that doesn't move when the function is applied to it. In many branches of mathematics and its applications, including