

# Important of Combinatorial Properties of Metric Spaces using Fixed Point Theory

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**Abstract:** *In this paper, we investigate some approximate fixed point results in extended b-metric spaces using several contraction mappings such as the Mohseni-Saheli contraction, the B-contraction, and their consequences. Additionally, we prove some  $\epsilon$ -fixed point results by using rational type contraction mappings. Also, a few examples are included to illustrate the results. Finally, we discuss some applications that support our main results in the field of applied mathematics.*

**Keywords:** fixed point, b-metric space, approximate fixed point, rational contraction

