

L'Hopital's Rule for Evaluating Limits

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Abstract

L'Hopital's Rule is a fundamental tool in calculus used to evaluate limits. It offers a systematic approach for dealing with indeterminate forms that arise from the ratios of functions approaching zero or infinity. This project aims to demonstrate the practicality and significance of L'Hopital's Rule in solving limit problems by defining functions and their derivatives and calculating values at specific point. To represent L'Hopital's Rule and its related functions, the open-source software GeoGebra was utilized. Through the use of GeoGebra, complex limit expressions can be simplified, and insights into the behaviour of functions as they approach specific values can be gained. This project provides a conceptual exploration of L'Hopital's Rule, highlighting its importance and practical applications in solving the limit problems.

Keywords: L'Hopital's Rule, calculus, limits, indeterminate forms, ratios, functions, derivatives, limit problems.