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NUMERICAL METHOD/ANALYSIS STUDENTS' CONCEPTUAL DERIVATIVE KNOWLEDGE

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ABSTRACT

Advanced level mathematics and engineering courses such as Numerical Methods and Numerical Analysis require advanced knowledge of derivative. In this paper, undergraduate and graduate engineering and mathematics Numerical Methods-Analysis course students' conceptual derivative knowledge is observed. Students' ability to determine the cusp points (if exist) of a quotient function after calculating the first and second derivatives of the function is investigated. In addition, student responses to find the derivative of a composition function is evaluated by using the schema development idea of Piaget and Garcia (1989) where the participants were expected to apply the chain rule and determine the domain of differentiation for the given function.

Key Words: Derivative of functions, the chain rule, schema classification, concept image, critical points.