

**UNIVERSITI TEKNOLOGI MARA**

**SOLVING DOUBLE INTEGRATION  
PROBLEMS USING NUMERICAL  
METHODS**

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## ABSTRACT

Numerical methods are an alternative to theoretical methods that can be used to solve complicated integration problem. This numerical method is often used when theoretical methods are difficult to implement. Some numerical method for solving integration problems include Trapezoidal method, Simpson's  $1/3$  method, Simpson's  $3/8$  method, and Trapezium-corrected Simpson's Method (TCSM). These numerical methods could be extended to solve double integration problems. This study aims to investigate the behaviour of these numerical methods in solving double integration problems. The performance for each numerical method is analysed based on percentage of relative errors. The result showed that Simpson's  $1/3$  is the best method for solving double integration problems.

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