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| **Practicum Case** |  |
| MATH6183 | MATH6183001 | MATH6183016 | MATH6183049  Scientific Computing |
| **Mathematics** | **E231-MATH6183-JJ01-05** |
| ***Valid on*** *Even Semester Year 2022/2023* | **Revision 00** |

## Learning Outcomes

* LO4 – explain basic concept and application of numerical differentiation, numerical integration, and ordinary differential equations in scientific computation

## Topic

* Session 05 – Numerical Differentation and Integration

## Sub Topics

* Left Riemann
* Right Riemann
* Midpoint Riemann
* Trapezoid Rule

## Soal

*Case*

1. **Integral Riemann**

Use the **Left Riemann**, **Right Riemann**, and **Mid Riemann** integral to find the **approximate** of  with **30 evenly spaced grid ponts** over the whole interval.

1. **Trapezoid Rule**

Use the **Trapezoid Rule** to find the **approximate** of  with **27 evenly spaced grid ponts** over the whole interval.