Practicum Case	
MATH6183 | MATH6183001 | MATH6183016 | MATH6183049 Scientific Computing	BINUS UNIVERSITY Software Laboratory Center
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 $\int_{-3}^{3} 4x^4 + 2x^3 - 6x \ dx$ with **30 evenly spaced grid ponts** over the whole interval.

2. **Trapezoid Rule**

   Use the **Trapezoid Rule** to find the **approximate** of $\int_{-\pi}^{2\pi} \sin^2 x + \sin x + 2 \ dx$ with **27 evenly spaced grid ponts** over the whole interval.