Engineering Mathematics Report 2

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Deadline 23:59 on July 13

Submission Solve the following problem, write the answer in a word or pdf file, and put the file on scomb: `https://scomb.shibaura-it.ac.jp`.

Note Write the date when you made the file, your ID number, and your name in the file. As for the graph, use some drawing software like gnuplot to draw graphs and embed them in the file of the report. Write the process of calculation. You may hand-write the process of calculation and scan it, but even in that case use some drawing software to draw graphs. I recommend you to use a typesetting system LaTeX. I made the configuration of this report on scomb so that you cannot submit the report after the deadline.

Problem Calculate the Fourier series of the function $f(x) = x^2 + x$ on the range $[-\pi, \pi]$ and then depict the graph of the partial sum up to the terms $\cos 5x$ and $\sin 5x$

$$\frac{1}{2}a_0 + a_1 \cos x + b_1 \sin x + \cdots + a_5 \cos 5x + b_5 \sin 5x$$

together with the graph of the function $f(x)$.