

Applied Mathematics Report 2

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Deadline 23:59 on June 30

Submission Solve the following problem, write the answers in word or pdf format, make a folder of your ID number like XL14000 in the folder of `kadai2` in the folder of **Submission** in the folder of **Applied Mathematics**, which can be accessed on the computers in this institute, and put the file in the folder you made.

Note Write the date when you made the file, your ID number, and your name in the file. As for the graphs, use some drawing software like gnuplot to make 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 make graphs. If you submit the report after the deadline, I do not guarantee the point of the report to be included in the total score.

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

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

and the function $f(x)$.