Quest for Mathematics I - E2

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First Semester 2018/19
Fridays 2nd period (10.30-12.00)
Room 33, Academic Centre Building, North Wing
Yoshida South Campus

Course overview

This class aims at providing an introduction to calculus for those who did not study 'Mathematics III' (of the Japanese high school standard), or its equivalent. In particular, the goal of the class is to solve problems of the same level as those in the entrance examination for science students. An additional goal of this course is to give a chance to the students to present and discuss mathematics in English.

Format

Principally this will be a lecture course, though it will also incorporate plenty of exercises. Exercise sheets will be handed out fortnightly, with the first handed out in the second class. Students should submit their answers the following week for grading. Students will also be asked to present/discuss solutions to some exercises in class.

Evalation

The overall mark for the course will incorporate the following:

20% for homework;

10% for presentation in class;

70% for the final exam.

Content

The course will cover the following topics, each taking approximately three or four weeks.

1. Limit of sequences, series and continuous functions
2. Differentiation of elementary functions
3. Brief introduction to the Riemann integral and differential equations
4. Applications

References

All the relevant content will be covered in the lectures, but some additional background reading and exercises can be found in the following book.

M. D. Weir, J. Haas and C. Heil, *Thomas' Calculus*, Pearson