Calculus 2 IBDPE Midterm 1 Info

Time and Location

Friday, April 17, 09:10-10:00 at D.A.E. 5825 (for Even student ID number) and D.A.E. 5824 (for Odd student IP number).

Ground Rules

- Closed book. No notes. No calculator. The only allowed items on your desk are pen/pencil, erasers/whiteout, and ruler. No food is allowed. Coffee or beverage is allowed, although discouraged.
- Please use the bathroom before the exam. If you absolutely have to go to bathroom during the exam, you need to go to the designated ones that we have inspected before the exam. You also need to verify to me that your pockets are empty before you go.
- No hat nor sunglass may be worn unless required by medical condition.
- ABSOLUTELY no electronic device may be turned on during the exam. Any voice from cellular phone is considered cheating.
- Makeup exam is only possible when a student is absent due to university official duties.
- Regrade: please see the syllabus for regrade policy.

Tools

Only writing tools are allowed during this exam.

Format

There will be six equally weighted problems. You will choose four problems to answer and indicate which four problems to be graded. Problems not indicated for grading will be ignored.

Topics to Cover

This exam covers materials from beginning to April 10. Specifically,

- Sequences: Know the definitions of sequences, be able to apply theorems and facts (eg. Pinching theorem) introduced in class to prove (or compute) the existence of the limit. You do NOT need to know the precise definition of limits (ie. The epsilon-delta definition).
- Improper Forms: Be able to apply L'Hopital's rule at various applicable situations to compute the limit of a function. When using L'Hopital to compute the limit of sequences, be sure to change your variable before doing so. Be able to compute improper integrals and determining whether an improper integral is infinite or finite. The p integral is of particular importance.
- Series: Know the definition of series. Be sure to know the three basic series introduced in class and find the limit of infinite series of those three forms. Know the definition of convergence of series and be able to apply all the tests to determine the convergence behaviors.
- Taylor Series: Know the definition of Taylor series. You need to be able to derive the four basic Taylor series introduced in class (e^x, sin x, cos x, and ln(1+x)) at x=0 or x=a. Be able to use Taylor series to approximate the value of a function with errors in range.

Study Suggestions

- Get enough sleep the night before the exam.
- Practice homework problems THOROUGHLY and be able to appreciate the insight of the problems so that you can do those problems in any forms and with moderate variations. Exam problems are modelled on homework problems.
- This exam emphasizes on conceptual understanding rather than mechanical computations. If you are stuck in long computations, it is recommended to rethink your process and see if you are forgetting some part of the concepts.