Exam prep advice for MATH2017

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12/5/23

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3. **LEARN THE GODDAMN DEFINITIONS!!!**

Classifying questions on the 2023 paper

Type	marks	example
Prove a simple fact	26	2022 Q3
Precisely define	24	2022 Q1
Apply theory developed in module to prove something new	21	2022 Q4(e)
State a theorem from the notes	13	2022 Q4(a)
Just compute something	12	2022 Q5(b)(i)
Prove a theorem from the notes	3	2022 Q4(c)
Give an example of	1	2018 Q1(c)

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- It's much more important to know (and **understand**) the statements of all the theorems.
- You will be expected to prove (mostly simple) **new** things. So think of the proofs in the notes as "examples" of proofs. Reading and understanding them prepares you to use the underlying ideas.

Some advice

- Some of the proofs are too hard to be examinable:
  - Theorem 4.20 (Taylor's Theorem)
  - Theorem 5.20 (Continuous functions are integrable)
  - Theorem 7.23 (Uniform convergence is equivalent to the Uniform Cauchy property)
  - Lemma 8.20 (A power series has the same radius of convergence as its termwise derivative)
  - All proofs in section 8.6.

Some advice

- The exam is marked by a team (including me).
- We split the marking by **question**, so I will sit down and mark (say) question 2 on each of the ~ 160 scripts, while another team member does question 3 (say).
- **No-one will sit and read your script form start to finish in one go!**
- Make life easy for the markers: arrange your answers so that they're easy to find.

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- Will the questions in the exam be a similar style to the homework/ tutorial questions or will they be closer to the questions on the past exam papers from 2018 and 2019?
- I was hoping on Friday in the Q+A session you would be able to cover how you can construct a sequence / function that does / does not have certain properties.

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- If we’re asked to prove something and want to refer to a Theorem from the lecture notes, do we have to quote the Theorem number, or can we just say “by a theorem in the notes”.

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$$f : \mathbb{R} \to \mathbb{R}, \qquad f(x) = \sum_{n=1}^{\infty} \frac{1}{2^n} \sin(3^n x).$$

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- Hope you enjoyed the ride!