MA 213 Second Year Essay

Information

Facts

1. Core
2. 6 CATS
3. 15 minute presentation (20% of the mark)
4. 8-12 page essay (80% of the mark)

Deadlines

1. **Term 1 (NOW!)**. Discuss title with tutor. Your tutor must approve your choice.

2. **Term 2, week 1**. Draft to tutor for feedback.

3. **Term 2, week 9**. 15 minute oral presentation (20% of the mark), at a time to be arranged by your tutor.

4. **Term 3, Thursday of week 1 at 2pm** (25th April, 2013) Final written version.

Marking Criteria

- **Understanding (45%)** Accuracy and logical structure of mathematical reasoning, concise and purposeful discussion of theory, use of examples

- **Content (30%)** Difficulty, breadth and coverage of material

- **Presentation (15%)** Clarity and ease of reading through good use of language, use of helpful diagrams and other graphics

- **References (10%)** This includes extensive research which is properly quoted, and accredited, a good bibliography, and the placement of the main topic in context of a broader mathematical area

Choosing a topic

- Choose something you find interesting!
- Ask your tutor for advice
- Follow-up on something mentioned in passing in lecture
- Use the web to find a topic
- Use the library!

Why the essay?

- Not the standard lecture/notes/exam method
- Writing a coherent account forces a clearer understanding
- Transferable skills
- Interest

How to write a good essay

- Include mathematics!
- Write for a fellow maths student at Warwick
- Include examples, worked exercises
- Don’t bluff
- Omit some details

- Guide your reader:
  - Our first goal is ...
  - The hard part is to show ...
  - It remains to check that ...

How to write a bad essay

- Choose a topic with minimal mathematics
- Spend most of the essay introducing the non-mathematical topics
- Include a calculation that takes at least two pages
- Don’t define your notation
- Don’t bother to proof-read
- Copy large amounts

Planning

- 45 hours work
- Term 1: collecting sources and background reading
- First draft between Term 1 and 2.
- Term 2: Feedback and improvements, and prepare the oral presentation.
- Finished version between Term 2 and 3.

The oral presentation

- For your peers
- 15 minutes is very short
- Start with the key questions/motivation
- Omit proofs
- Advertise your essay!
- Practise!!!

Style

- NOT an English essay
- Read your essay aloud
- Beware plagiarism
- Learn how to cite.
- Try Latex

Set $a = (b + 1/c)$.

If $x > 1$ $f(x) < 0$.

For $n = r$ (2.2) holds with $\delta = 0$.

$e^{\frac{2\pi i}{\sqrt{x^2+y^2}}}$ or $\exp\left(2\pi i(x^2+y^2)^{1/2}\right)$.

The number of prime divisors of 30=3.

$\exists 0 \leq i \leq n$ with $f(i) > 0$.

Let $f(g)$ be the left (right) quotient.