Math 250: Number Theory
Instructor: David Zureick-Brown ("DZB")

All assignments
Last updated: January 24, 2024
Gradescope code: ZWK583

Show all work for full credit!
Proofs should be written in full sentences whenever possible.

Contents

Assignment 1: Introduction to course.

Due by 11:25am, eastern, on Thursday, Feb 08

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Feb 08, 11:25am, via Gradescope (ZWK583):

Assignment 2: TBA

Due by 11:25am, eastern, on Thursday, Feb 15

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Feb 15, 11:25am, via Gradescope (ZWK583):

Assignment 3: TBA

Due by 11:25am, eastern, on Thursday, Feb 22

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Feb 22, 11:25am, via Gradescope (ZWK583):

Assignment 4: TBA

Due by 11:25am, eastern, on Thursday, Feb 29

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Feb 29, 11:25am, via Gradescope (ZWK583):

Assignment 5: TBA

Due by 11:25am, eastern, on Thursday, Mar 07

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Mar 07, 11:25am, via Gradescope (ZWK583):

Midterm 1 study guide

In class on Thursday, Mar 07

Content: The questions will all be either

1. homework problems,
2. suggested problems,
3. problems we worked in class, or
4. minor variations of one of these.

Problems with very long proofs or that involved some unusual trick will not be on the exam.

You are allowed to use any previous problem from class or from the homework (e.g., "additivity of divisibility" or "the 2 out of 3 rule") on the exam without reproving it, unless otherwise noted on the exam. (E.g., if I ask you to prove "additivity of divisibility" on the exam, you will need to prove this using only the definition of divisibility, and I will remind you of this in the statement of the problem.)

A typical exam will have one or two questions from each week of the course. You can expect problems about following:

- TBA

For definitions, I want a definition, in prose (complete sentences), and I want "just" the definition, and not any additional facts about the definition. (E.g., if you give the definition of rational, do not include that a rational number can be written in reduced form; that is a fact about rational numbers not part of the definition of rational.)

Assignment 6: TBA

Due by 11:25am, eastern, on Thursday, Mar 14

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Mar 14, 11:25am, via Gradescope (ZWK583):

Assignment 7: TBA

Due by 11:25am, eastern, on Thursday, Mar 28

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Mar 28, 11:25am, via Gradescope (ZWK583):

Assignment 8: TBA

Due by 11:25am, eastern, on Thursday, Apr 04

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Apr 04, 11:25am, via Gradescope (ZWK583):

Assignment 9: TBA

Due by 11:25am, eastern, on Thursday, Apr 11

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Apr 11, 11:25am, via Gradescope (ZWK583):

Midterm 2 study guide

In class on Thursday, Apr 04

Content: The questions will all be either

1. homework problems,
2. suggested problems,
3. problems we worked in class, or
4. minor variations of one of these.

Problems with very long proofs or that involved some unusual trick will not be on the exam.

You are allowed to use any previous problem from class or from the homework (e.g., "additivity of divisibility" or "the 2 out of 3 rule") on the exam without reproving it, unless otherwise noted on the exam. (E.g., if I ask you to prove "additivity of divisibility" on the exam, you will need to prove this using only the definition of divisibility, and I will remind you of this in the statement of the problem.)

A typical exam will have one or two questions from each week of the course. You can expect problems about following:

- TBA

For definitions, I want a definition, in prose (complete sentences), and I want "just" the definition, and not any additional facts about the definition. (E.g., if you give the definition of rational, do not include that a rational number can be written in reduced form; that is a fact about rational numbers not part of the definition of rational.)

Assignment 10: TBA

Due by 11:25am, eastern, on Thursday, Apr 18

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Apr 18, 11:25am, via Gradescope (ZWK583):

Assignment 11: TBA

Due by 11:25am, eastern, on Thursday, Apr 25

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, Apr 25, 11:25am, via Gradescope (ZWK583):

Assignment 12: TBA

Due by 11:25am, eastern, on Thursday, May 02

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, May 02, 11:25am, via Gradescope (ZWK583):

Assignment 13: TBA

Due ???

Suggested readings for this problem set: TBA
All readings are from Silverman, A Friendly Introduction to Number Theory.

Assignment: due Thursday, May 07, 11:25am, , via Gradescope (ZWK583):

Final exam study guide

Final exam is **May ???**, ???pm, in SMUD 014.

The **last day of class** is Tuesday, May 7.

There will be **office hours** on before the exam. I will send out a survey to find a time that works for everyone who is planning to attend.

The final exam will be comprehensive.
The exam will be, roughly 8-10 questions, with multiple parts. Some questions will be "prove or disprove". For disproofs, please write out a counterexample as your disproof.

A typical exam will have roughly one or two questions from each week of the course. You can expect a subset of the following:

- TBA