

Fields

The goal of the presentation is to discuss fields. Your presentation should include at least

- A discussion of what a field is.
- A discussion of for what numbers n $\mathbb{Z}/(p)$ is a field.
- The definition of a characteristic of a field.
- Discussion of what a finite field is (and what sizes are possible)
- At least 4 examples of fields.

In addition you should include at least one thing not on the above list

At the end of your presentation the class will be asked one of the following questions.

- Which of the following are fields: $\mathbb{Z}/(6)$, $\mathbb{Z}/(5)$, $\mathbb{Z}/(4)$, $\mathbb{Z}/3$?
- Is there a field with exactly 24 elements? What about 25?
- Which of the following are fields: The Integers, The Rational Numbers, The Real Numbers?

A good starting point for your research is

<http://en.wikipedia.org/wiki/Fermat>

If you have any questions regarding the presentation feel free to e-mail your TA or Dr. Ackerman