Math 303, Fall 2011, Lecture 10

(1) Continue the presentations.

I'll present the two that no group chose

Next lets think about which of them seem intuitively plausible and which don't

$\bigtimes_{i \in I} Y_i \neq \emptyset$

Choice sets

Well ordering

Zorn's Lemma

$A \leftrightarrow A \times A$

De Bruijn - Erdős

Banach - Tarski

A subset of $\mathbb{R}$ with no countable subset

Sequentially continuous does not imply continuous

(2) What shall we do next

There are 3 places we could go next in the course

(1) Go through Stromberg's proof of the Banach-Tarski paradox

Main ref
Background requirements
Feel

(2) Develop ordinals and cardinals

Main ref
Background requirements
Feel

(3) Underpin what we've already done with logic

Main ref
Background requirements
Feel