

Szakdolgozat szerzője:	Cheng Ka Yue
Neptun kódja:	K2VXS8
Születési ideje:	1988.04.20
Szak / alapszak:	logika és tudományelmélet
Szakdolgozat címe:	Logikai paradoxonok és eldönthetetlen mondatok Logical Paradoxes and Undecidable Sentences
Témavezető oktató:	Csaba Ferenc
Bíráló tanár / beosztása:	Sain Ildikó, tudományos főmunkatárs (Rényi Intézet)
Érdemjegy számmal, betűvel:	5, jeles
Szöveges bírálat:	

Gödel's two incompleteness theorems are among the most important results in modern logic. They have deep implications in various areas of science including, of course, philosophy. The author first states and proves these two celebrated theorems.

The original proof by Gödel takes a paradox, and, via analysing it in a precise mathematical way, he arrives at a statement which can neither be proved nor disproved. Later, the analysis of other paradoxes lead to similar statements. The author picks some paradoxes from the literature and investigates them, from this point of view. He also introduces his own new paradoxes.

Besides telling us about these famous (or less known, or even new) paradoxes, the author puts them into precise mathematical formulation. This makes it possible that we can get a mathematically transparent view about them and connections between them.

In the end, the author mentions that an abstract theory of paradoxes might get developed sometime in the future.

The topic of the thesis is modern, interesting, and deep. A lot of knowledge concerning the relevant paradoxes has been „floating in the air”. It is high time that they are put to some kind of a „map” in a precise way. The author made a big step in this direction. He also proved his deep knowledge in this field.

The presentation of the work is good, although the introductory part of it

was written carelessly. It may frighten some readers. In case of publication, I suggest the author to pay more attention into the presentation of the „trivial” parts, too.

Questions for the closing exam:

- In your dissertation, the provability predicates $Prov(x)$ and $Prov_R(x)$ have been defined (p.16 and p.19, respectively). Explain informally (without recalling all the 50 items preparing these concepts) what they are and compare them.
- You described a number of exciting paradoxes in your dissertation. Please choose one of them (or a group of them) and explain us how it (they) is (are) relevant to Gödel's incompleteness theorems.
- What is the diagonal lemma? State and explain.