

## How the exam looks like?

*Exam test:* 90 min, need at least 1/2 pts for advancing to the oral part.

*Oral exam:* apx. 20 min, in the order of handing out the tests.

*What will not be it the exam test?*

- Hilbert's calculus (neither at oral exam).
- Programs in Prolog (neither at oral exam).
- Resolution method in pred. logic with unification (neither at oral exam).

*What will be at oral exam?*

- (a) Definitions, algorithms or constructions, statements of theorems.
- (b) A proof of a (specified) theorem (lemma, proposition).

*Remark Here is an example of an exam test.*

# Which proofs are at oral exam?

- Cantor's theorem, König's lemma.
- Algorithms for 2-SAT and Horn-SAT (correctness).
- Tableau method in prop. logic: syst. tableau (being finished, finiteness).
- Tableau method (cont.): soundness, completeness. Compactness, corollaries.
- Resolution in prop. logic: soundness, completeness. LI-resolution.
- Semantics of pred. logic: theorem on constants, open theories, deduction thm.
- Tableau method in pred. logic: syst. tableau, role of axioms of equality.
- Tableau method (cont.): soundness, can. model (with equality), completeness.
- Löwenheim-Skolem theorem. Compactness theorem and corollaries.
- Extensions by definitions, Skolem's theorem, Herbrand's theorem.
- Resolution in pred. logic: grounding.
- Elementary equivalence, isomorphism and semantics,  $\omega$ -categoricity.