

Logic final exam review

The exam will consist primarily of four types of questions.

1. Translating sentences from English to predicate logic.
 - (a) Make sure you understand how to use the equality symbol to symbolize numerical statements, statements such as “nobody but ...”, and statements such as “the F is G ”.
2. Proofs. You are *not* expected to memorize the axioms for specific theories, such as Peano arithmetic or set theory. You are also not expected to memorize definitions of new symbols in set theory. However, we might give you some axioms and definitions, and then ask you to prove something from them. We recommend that you focus effort first on the sorts of proofs that occur in the “quantifying” chapter, second on proofs using $=$ intro and elim, and third on proofs in set theory.
3. Interpretations
 - (a) Know what an interpretation is.
 - (b) Most importantly, know how to determine the truth-value of sentences in an interpretation.
 - (c) Know how to construct an interpretation that shows that an argument is *not* truth-preserving.
4. Conceptual. Answering these questions correctly depends primarily on your knowing precise definitions of concepts. e.g. what does it mean for an argument to be *truth-preserving*? e.g. what is the precise definition of the EE rule, including its restrictions?

Here are some things that you will *not* be expected to know.

1. You will not be expected to know anything from Chapters 9 and 10 of the book — unless we explicitly discussed it in lecture.
2. You will not be expected to do proofs with the induction schema of Peano arithmetic.

3. You will not be expected to prove that any of the rules of inference transform good lines to good lines.
4. You will not need to know the definition of one-to-one or onto function.

Please feel free to send questions for clarification to hhalvors. Answers will be added to this document.