

MATH 277, AUTUMN 2010: MIDTERM EXAM INFORMATION

The midterm exam will be **Thursday, October 21, in class.**

The purpose of the exam is to check that you have a clear understanding of the material we have covered so far, which will serve as a foundation for the remainder of the course.

Exam format: The exam will have four graded questions (you will have some choice: do any four out of the given five). There may be a bonus question, which will be worth a small but nontrivial amount, and should only be attempted if you are completely finished with the exam.

Recommended studying: Lecture notes, homework. Course texts and handouts may also be useful.

- At least one homework question will appear on the exam.
- Know the statements and proofs of the main results we have covered so far.

Major topics. The major topics we have covered include:

- (1) Induction and recursion
- (2) Basics of sentential logic, in particular:
 - (a) Languages for sentential logic, wffs
 - (b) Models, \models
 - (c) Deduction, \vdash , and $\vdash A$ iff $\models A$
 - (d) Complete systems of connectives
 - (e) A set of wffs Σ is consistent iff it is satisfiable
 - (f) *An important corollary of the previous item*
- (3) Basics of first-order logic, in particular:
 - (a) Languages for first-order logic, terms, (well-formed) formulas, sentences
 - (b) Models, $M \models \varphi$ for φ a sentence, $M \models \psi(a_1, \dots, a_n)$
 - (c) \equiv , \cong , automorphisms of models
 - (d) Definable sets

As you review the material from sentential logic, it is worth thinking about what results are likely to extend to first-order logic as stated, and which may need further definitions/work.

Questions? There will be an in-class review on the Tuesday prior to the exam. If there is anything you would particularly like discussed, write to me (M. Malliaris) by Monday night.

Pre-exam office hours: Malliaris 4-5pm Thurs 14, 5-6pm Fri 15. Astor 4-5pm Fri 15, 2-4pm Wed 20.