NOTES ON THE MIDTERM

MATH 303, FALL 2011

The midterm is on Thursday November 3 in class. You will have the full two hours to complete it, but it shouldn't take that long. There are some questions of each type which appears on the assignments. The proofs come from class and from previous assignments, so please review those.

A typical question on the midterm has the form

(1) **(2 points)** Do **one** of the following three questions.

   (a) *stuff*
   (b) *other stuff*
   (c) *a third possibility*

Don't do all three parts, just do one, like it says.

I will have my normal office hours next week (Monday 11:30-12:30 and Wednesday 2:30-3:30 in my office SC K 10508). Nathan will have office hours Wednesday November 2 from 9:30-11:30 in SC K 9512.1.

Here are some practice questions on the material since assignment 4.

(1) Evaluate $(\sim (A \wedge B)) \wedge (A \vee B)$ with a truth table. Is it a conjunction you recognize?

(2) Write a sentence in our formal language stating the existence of the empty set. Your answer should not involve the symbol $\emptyset$.

(3) Which of the following are well formed formulas? Which of the well formed ones are good?

   (a) $x \in y \vee z$
   (b) $\forall x \exists y \exists x (x \in y)$
   (c) $(\forall x (x \in y)) \vee (\exists y (x = y))$
   (d) $(y \in x) \wedge (y = x)$

(4) Mark the free and bound variables in the well formed formulas of the previous part.