

About the final exam: It is Friday, Dec 11, 2015, from noon to 2pm in the usual room. It will have about twice as many problems as the average 50 minute midterm, about the same as my posted finals from 2014 and earlier. About half the problems, maybe more, will form an "Exam 4" on recent material not covered on Exam 3.

Most of the problems will resemble HW exercises from Chs 1-9 and the others might be True-False, state a definition or a theorem, or perhaps a proof. The problems will not necessarily resemble ones on your previous exams, or ones from previous years, though the level of difficulty, etc, should be similar.

How to prepare: [How I would prepare, if I were you - but feel free to prepare as you like.] First, master Ch.9 to the end, including *at least* the assigned HW through 9.5. I'm guessing this will require about 70% of your study effort.

Second, review the entire course rather quickly, checking that you remember the basics, and can still do most of the HW from weeks or months ago. Make an effort to patch your personal weak spots, and to review any problems from Exams 1-2-3 that the class seemed weak on (such as the proofs from Ch. 4.6 and division of power series sometimes used in reduction of order). But do not get too obsessed with any single topic - it is probably better to master several shaky topics than to improve your worst one.

Third, if you have time, you can practice with my finals from previous semesters. Take them like real exams, without a book, and time yourself. It is unlikely that you will see the exact same problems on the 2015 final, but you can probably get a feel for whether you know enough, whether you can work fast enough, carefully enough, etc.

Memorization. Formulas, theorems, definitions, etc: In general, you should know most of the theorems and the formulas in them. This includes formulas for μ , v_1 , Γ , Table 9.1, $L(f)$, etc that you have seen several times or needed in HW. It also includes the standard methods for each major type of DE (exact ones, UC sets, etc) and the applications we covered in Chs 3 and 5.

Use your judgement. I would not expect you to know exactly the various formulas for Y_0 and J_p , the answers in Ch 5, and every bit of Thm 6.3. I would expect that you have seen these though, and could perhaps answer easy True-False on them.