Review Sheet for Math 20580, Spring '09, Final Exam

Disclaimer. The following review sheet represents a sincere attempt to help you prepare for the exam. It is not in any sense a practice exam. Nor is it necessarily complete. There might be things on the exam that are not mentioned directly here, problems that look different than the review problems suggested here, etc. Nonetheless, we think it's better than nothing...

Practical details. The exam runs from 1:45-3:45 on Friday, Dec 17 in Hesburgh 107. There will be a review session Thursday, Dec 16 from 4:30-5:30 PM in Debartolo 141 (note different room location).

The exam will be comprehensive, including all material (with one exception noted below) covered on the midterms together with sections 2.3, 2.5, 3.1-3.5 and 3.7 from Boyce and DiPrima covered in lecture after the third midterm. The format will be similar to that of the midterms. However, since we're in the last final slot, it's important that I get grades in quickly, so for that reason, there will likely be more multiple choice and less partial credit. As usual, *no calculators, books, or notes will be allowed*.

Material covered on the final. You are responsible for all material listed on the review sheets of the first three midterms. In addition, you should know how to solve exact first order ODEs (section 2.6) and deal with linear 2nd order ODEs (3.1-3.5, 3.7). Note that while we mostly dealt with constant coefficient 2nd order ODEs, there was a little material (e.g. in 3.4) concerning linear ODEs with non-constant coefficients. Also, by this time in the course, complex numbers have come up a couple of times, so I might well just ask some questions about complex numbers themselves. You are not responsible for section 3.6, which I ended up skipping.