

Final Exam Review!!!

Artesian Water

June 12, 2007

Hi everyone, this is some artesian water from Norway. Corey liked the water bottle that I came in, and just decided to keep using it. People in the math department think it contains hair gel. It does not contain hair gel. It's water. All the same, I've been sitting on Corey's desk today and I've been surprised that so many people have come in to see him! So many in fact that Corey was talking constantly for over 5 straight hours! He didn't do this sheet yesterday because he went home sick instead of staying late to finish this handout. I began to get a little concerned that the review sheet has not yet made it online, despite Corey's best efforts. So I'm taking the reigns, and here it is.

1. Section 8.3: Trig Integrals. In this section we learned how to integrate powers of sin and cos, and we learned how to integrate powers of secant and tangent. The key is to remember that in all cases but one, we use a u -substitution, and what's important is to make sure you keep your du off to the side as part of your substitution efforts. The only time you don't use a really straightforward substitution is when all of the powers in a sin and cos integral are even, then you must use the power reduction formulas that Corey will provide should you need them.
2. Section 8.4: Trig Substitution. In this section we utilize the Pythagorean identities to guide us in a fun substitution that will change certain integrals into a form that could be solved using the techniques in the previous section. The key is to identify which of the Pythagorean identities will help you the most. If you choose incorrectly, then you'll know it after your original substitution, so don't be afraid to just start writing stuff down!
3. Section 8.5: Partial Fractions. This section is one we didn't cover in its entirety. Corey will ask you a question very similar to the ones he covered in class. That is, he'll ask you to solve an integral that involves a constant divided by a degree 2 polynomial with distinct roots. The method he outlined in class will be all that you'll need to study in order to solve this sort of problem. Numbers 1, 5, 7, 8, 9, 39, 48 and 51 provide examples of integrals of this sort.

4. General Suggestions. The suggestions that I have for you are to simply study the homework, class notes, and exams and quizzes. Really the exams and quizzes form the foundation for what Corey thinks you should know, and these notions will be a large part of the exam. Of course, the sections above are ones that we've covered since the last quiz, so you'll have to use your judgement as to what sorts of questions Corey would ask about. But, he's been really straightforward in class about what it is exactly that he wants you to know, so for these sections look over the class notes and the homework and that should give you a good idea. Other than that, it's been a great term, and I'm sad to see you all leave! My last piece of advice is that you all ROCK ON!!!