Questionnaire – April 25, 2014

1. Which resources did you use to prepare for the exam? ■ = used ■ = most helpful

   textbook 13,6 notes 19,6 previous midterms 17,7 practice midterm 13,7

   review session problems 18,12 x-hour 9,2 office hours 3,1 tutorials 4,0

   Other: outline/formula sheet[1], homework, making study guide based on mistakes.

2. Which resources did you find most helpful?

3. Write down a question, comment, or suggestion you have pertaining to the course.

   See below.

4. Rewrite the series so that the index starts at 0. That is, take index $m = n - 2$.

$$\sum_{n=2}^{\infty}(n+2)(n+1)a_n(x-x_0)^{n-2} \qquad n = m+2$$

Answer: $\sum_{m=0}^{\infty}(m+4)(m+3)\,a_{m+2}\,(x-x_0)^m$

Correct: 3

close, but tiny mistake: 4

incorrect: 8

had no idea: 7

Questionnaire Responses – April 25, 2014

1. **I would appreciate another example of repeated eigenvalues.** No problem. I have posted one on the website under "Extra example with repeated eigenvalues."

2. **Still unsure of how the paper will work.** We'll distribute that information soon and talk about it in class on Monday.

3. **Do review problems in session. Needed to see problems done. Review session not worthwhile.** I did a problem session for the review on Monday because a vast majority of students requested it on the questionnaire. Doing the practice problems gives you an idea of which types of problems you need extra practice with. At the beginning of the session, I also offered to go over problems during the review session if anyone requested it and was open to questions.

4. **Oh man do I need a lot of Taylor Series/power series review.** Got it. Try to review some of the concepts before class on Monday, but we will certainly spend time on review.

5. **I would love more practice exams for the final/For the final, could we have more previous midterms/Could we have sample exams before the final? (We only had solutions for the midterm.)** I only provided those two previous midterms because those were the only ones I could find. However, I'm happy to supply a practice final, like the practice midterm (with the problems from the book), or practice problems for a review session.

6. **Too much material in a short amount of time, not enough time to sufficiently practice. I will likely retain very little knowledge of differential equations a few months after the course is finished.** Like many courses at Dartmouth, this course moves fast! A lot of the practice has to happen outside of the classroom in order to become proficient. Please come to x-hour and I'll provide you with extra practice problems.

7. **Would have been nice to have a question relating to Newton's Law of Cooling of a similar concept because I missed the first class and we never really had a homework problem related to a problem like that. That problem ruined me.** There was a question about constructing a model on the practice exam (number 1.1.24 in the book). This was to remind you of the idea of "change is proportional to present amount/temperature/population". **On the midterm, I had trouble writing equations to model real life events, will we get more practice with this?/I'm not sure how to construct the physically based models. Maybe you did that before I enrolled but those surprised me on the midterm/practice exams.** You're right that we talked about this early in the course. In fact, the example we used on the first day of class was Newton's Law of Cooling,

though I suggested that students look also at the other models in Chapter 1 (population and terminal velocity). You weren't expected to remember the formula for it, which is why we provided you with the "word problem" which stated that the change in temperature (T') is proportional (constant multiple) to the current temperature (T) minus the surrounding temperature ($T_a = 30°$). This was a question that required a little more thought and couldn't be solved using only the formula sheet, but the model itself is (supposed to be) simple.

8. **I didn't do too well on the first midterm. Will there be opportunities for extra credit?** We're considering it, but there aren't any plans yet.

9. **It's pretty clear. I try to do some homework each day. I just had a really bad week so I got no sleep last night.** Feel better soon! **I enjoy the way the class is being taught/very understandable and easy to follow along/good.** Great!