

Math 110 Final Exam Review!!!

By: The Rose Bowl!!!

December 5, 2009



Hi kids! Anyone see the game? The Ducks are going to the Rose Bowl!!! Here is your final exam review sheet. Below are the sections described which haven't yet been summarized on previous sheets. Remember that the final exam is cumulative, and will take place either Tuesday or Thursday of finals week—see the syllabus for when, depending on which one of Corey's classes you're in. Good luck!!! and ROCK ON!

1. Chapter 5: Inverse, exponential, and logarithmic functions. Rather than describing this chapter by its individual sections, Corey sees it more fit to describe it as a whole, as there is one unifying theme that the title describes. The storyline goes like this: if I give you a $1 - 1$ function, it has an inverse. Every reasonable exponential function b^x is $1 - 1$, therefore each has an inverse. We call that inverse the logarithm $\log_b x$. Every one of the properties of these logarithms is based solely on what characterizes it: that it is the inverse of a certain exponential function.

That being said, there is a lot to discuss with these functions, and inverses in general. For example, the horizontal line test, and finding the inverse of a function (page 324) are central to our understanding. Homework from 5.1 including (*but not limited to*) 3, 4, 17–20, and 25–42 are all excellent problems to study. In addition, graphs of inverse functions helped us to understand the graphs of logarithms in terms of the graphs of exponentials, and so questions such as 45–48 are interesting as well.

Getting back to exponential functions, we found our first interesting example and use of exponential functions as the compound interest formula, page 337, and revisited

on page 344. The number e is introduced and the continuously compounded interest formula follows, page 347. Questions 5–8 on page 351 form a great collection of questions that ask about compound interest, whether it is done n times per year, or done continuously.

Finally, logarithmic functions (including the common logarithm $\log_{10} x = \log x$, and the natural logarithm $\log_e x = \ln x$) are introduced, as are the equivalent exponential and logarithmic forms of equations. Solving logarithmic equations such as the problems starting at # 19 on page 366 are really important, but then again, so is pretty much everything else in this chapter! More complicated logarithmic equations are introduced in the next section, starting with # 17 on page 376.

2. Chapter 9: Systems of equations and inequalities. There is only one thing Corey wants you to do from this chapter, and he outlined it very specifically on the last day of class. And that is to solve a system of equations using the methods outlined in class. The question (or questions) appearing on the final exam regarding this material will be nearly identical to the examples given in class, so be sure to review that material!
3. General information: The final exam will be cumulative, and will be very representative of the information covered in the course. It will seem as though there is more of an emphasis on the later material, but the points are distributed evenly through the topics covered. Other than that, be sure to study hard! Corey has office hours as usual on Monday of finals week, although he has an off-campus meeting on Wednesday that will require him to miss the first part of his office hours Wednesday. It's been a great term! Good luck, and ROCK ON!!!!!!