

Study suggestions: (Homework)

You may have already found a study technique that works well for you. Great! But I often find that at the higher levels, when the material gets more difficult, what worked before might no longer work. It doesn't mean you have reached your mathematical ceiling, it just means you have to try some new techniques. Here are some suggestions that I have seen help many students.

When you sit down to do your homework (without being surrounded by temptations and distractions!), resist the temptation to jump right into the problems. You really need to take the time to read the corresponding sections carefully. (If you are very disciplined, ideally you would do a quick read of the section *before* discussion, and then thoroughly after class.) Reading a math textbook properly takes time! Think. Try hard to understand "why", not just memorize. Memorization can only take you so far, then the foundation crumbles. You are expected to go through each of the book's examples step-by-step, perhaps even working them on your own (not just copying them) and adding them to your notes. Read the proofs and justify each step. Go over your notes from class. The examples I choose are usually specifically chosen to *supplement* the examples in the book, not replace them. As a student, I found if very helpful to re-write my class notes as I went through the book, clarifying any points that weren't clear and adding additional insight and examples from the book. This takes time but it truly helps!

After reading the text and reviewing the class notes, then you should attempt to work the problems. Check your answers to all the odd problems as you go to make sure you are doing them correctly. For any problems that you get wrong, try them again. Don't give up easily, many problems require a few tries. Overcoming challenge is how we grow. Don't immediately look at the solution manual (or Slader or whatever) In fact, I would strongly suggest you don't have the solutions anywhere nearby when doing your HW...too tempting. If you just copy solutions, you will not gain the benefit of having figured it out yourself. Besides, there will be no "solution manual" in your career (or on exams) so you need to learn how to persevere and have faith that you can figure things out if you stick with it. College is more about learning how to learn than learning material. Look back in the notes or the example problems to see if there is a similar problem. If you are really stuck, sometimes it is helpful to skip the problem and come back to it later. You'll be surprised at how often that helps. If you still can't do it, CIRCLE IT then ask about it in class. If you make a mistake, don't erase. Instead, learn from it. Make a note in your own words as to your understanding. As to the number of problems, I try to assign enough problems for most of you to learn the material without over burdening you, but some of you may need to do more. Some students who do every problem in the book!

Study suggestions: (Exams)

The best way to study for a math exam is to review the basic concepts from your book and notes and then DO AS MANY PROBLEMS AS YOU HAVE TIME TO DO, including those on the sample tests as well as those in the chapter review of the book. (Note: sample tests are not a comprehensive review but an actual test that was given in a previous semester. It can be used as a tool for studying for the exam, but should not be the only tool used. Your exam may be very different.) You may find it helpful to make your own practice exams as well. It is not enough to LOOK at problems/solutions, you really do need to DO them, without looking back at notes. If you only look at the solutions, it may feel like you are "getting it", but chances are, you are not. You are not ready for the test until you are able to do many problems in a row correctly on the first attempt, without notes. You might like to use the sample test as a actual, timed, practice exam where you see what you can do without notes.



"But it's a LOT of work!"

All of this takes time, I know. And maybe you don't have the time or desire for it right now. I understand. Or maybe you try but you just get too frustrated. I've been there!

*But if you ask me what it is going to take for you to do better in the class, this is my advice: time, concentration, perseverance, and practice are the only way to succeed in math. Ask questions. **Come see me. I WANT to help you.** But I cannot help you if you don't ask or don't do your part. And try to keep a positive attitude and enjoy the journey. Education is a privilege, even if it is sometimes stressful and difficult.*