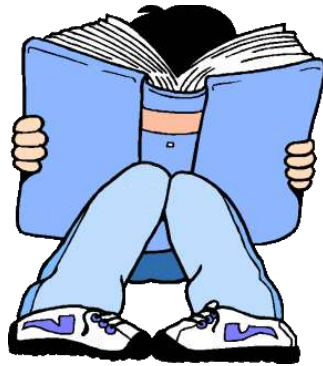


Tips for Reading a Math Book

The way we read a math book is different from the way we read a novel, an essay or other textbooks. Usually, students are encouraged to keep on reading if they run into new vocabulary when they are reading an essay because they can get the meaning of the new words from the context as they continue to read. However, by skipping some major concept words or formulas, you will not understand the math textbook or be able to do the homework. Reading a math textbook takes more time and concentration than reading your other textbooks.



Tips:

1. When you read a section, use a pencil to underline or circle new words that you don't know or you think are important. Don't highlight anything when you read the section the first time. You might see a lot of new terms, formulas and definitions and then you might end up highlighting almost every line. If you read the section the second time or third time, since you understand the section more and you feel more familiar with the words, some of the highlighted parts would not seem as important to you anymore, but you would not be able to delete the highlight. Therefore, it is better to highlight the parts that you think are important when you read the section again. If you highlight too much, it is equal to not highlighting anything. The purpose for highlighting is to emphasize the important material for future study.
2. If you get stuck reading a Math section, first, read the misunderstood paragraph(s) several times to better understand its meaning. Then, try to keep reading a little bit further to discover if any additional information better explains the misunderstood material; however, if you still cannot understand it, you need to stop moving ahead. Go back to the previous paragraphs or even the former sections which are connected to what you are reading. This will help you interpret new terms or formulas. Refer to other materials in a library or on the Internet for a better/different explanation for examples.

3. Sometimes, you might need to review the related, more basic part that you learned in high school to help you understand the new concepts you are learning now in university.
4. It is important to understand the requirements (**why**) and procedure (**how**) of using each rule, concept or formula.
5. Pay attention to examples in math textbooks. They show you why and how to apply the new rules, definitions or formulas in solving problems. Analyze the requirements and steps to solve this kind of questions.
6. Do homework after each section and chapter. Practice makes perfect. **Getting the right answers is not the last step of doing your homework.** You should ask yourself “What type of question does this question belong to” and “Which formula, concept and steps are needed to solve this kind of question?”.
7. Cover solutions and redo/practice examples in your textbooks and in your notes, as well as questions of your assignments. Especially, pay attention to the questions that you did wrong before. Analyze why you made the mistakes before and avoid making the same mistakes in your tests. It might be time consuming to redo the examples and questions, but it will benefit you a lot. The practice can make you familiar with the types of questions of the class. In addition, it can help you to find out which part you still don't understand and what kind of potential mistakes you could make in tests.
8. It is true that usually questions with solutions don't look too difficult to us; however, when we do the questions by ourselves without peeking at the solutions, it is another story – they are more difficult than we think. Therefore, it is important and necessary to redo examples and questions rather than to just read through solutions.
9. Some students complain that even though they spend a lot of time studying and doing all the homework and assignment, they still get confused and don't know how to resolve questions in tests. This happens because these students only limit their attention to individual questions instead of thinking about the type of questions. Instructors can make thousands of different questions about one sort of question. Thus, besides practicing on a single question, at the end of each chapter, it is smart to make a summary of the types of questions in the chapter. Don't forget to compare them with

the type of questions of previous chapters. If you can make a conclusion about the types of questions, when you see a question in a test, you just need to tell what kind of the type it belongs to and then which formula and steps are used for this kind of questions.

Read the section summary and then make your own section summary. A summary helps us to “put away” our knowledge. All the knowledge/details that you learn from a textbook and put in your brain are like all the stuff in your bedroom. You need to sort it; otherwise, when you need something, you might not be able to find it even though you know it is somewhere. You may be sure you learned it before, but you just cannot find it. It would be frustrating.

10. Don't skip the chapter introduction which usually acts as a connector between the previous chapter and the current chapter. Also it tells you the difference between these two chapters. Plus, it gives you a big picture of the content.
11. Be patient. Don't be frustrated if you spend more than half an hour on one page. Reading math textbooks is not too easy sometimes.
12. It is always a good habit to read/skim your textbook before a class.

Benefits:

- a. This habit of pre-reading will make you familiar with new terms and new context in the coming class. It can help you understand better in class since you have already overviewed it once before the class.
 - b. Bring questions from your preview of the textbook to classes. Most of your questions will be solved in class as the class proceeds. If there are still some unsolved questions, you can ask your instructor after class.
 - c. It can benefit your note taking. Without reading your textbook before your class, you don't know what is and what is not in it; so you might copy everything on the blackboard to your notes even though some samples or definitions are in your textbook and therefore it is not necessary to copy to your notes. It is wasting time. Actually, if you know the instances or concepts are in the textbook, you just need to spend a few seconds writing down the page number in your notes, e.g. Page 106 Ex. 6 or Page 118 Definition of Variance. This will help you save time on note taking and give yourself more time for understanding lectures.
13. Before your mid-term or final test, recall how many chapters you have learned in a textbook, what the main topic is for each chapter, how many types of questions in individual chapters, what requirements, formulas and steps are needed for every type

of question and what the relationship is between the chapters. Having such a whole picture of the textbook, you won't get into a panic on a test.

14. Don't be afraid to ask if you have questions. Try to clarify questions as soon as possible. Don't let your questions build up from the first school day to the end of the school semester. If you do, you will find out the questions will be like a rolling snowball which will be too huge to be solved in the end. Previous knowledge is linked to new content.