

How to Read a Math Textbook

The way you read a math textbook is different from the traditional way students are taught to read textbooks in high school or college. Students are taught to read quickly or skim the material. If you do not understand a word, you are supposed to keep on reading.

Instructors of other courses want students to continue to read so they can pick up the unknown words and their meanings from context.

This reading technique may work with your other classes, but using it in your math course will be totally confusing. By skipping some major concept words or bold-print words, 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.

If you have a reading problem, it would be wise to take a developmental reading course before taking math. This is especially true with math reform delivery, where reading and writing are more emphasized.

Reform math classes deal more with word problems than do traditional math courses. If you cannot take the developmental reading course before taking math, then take it during the same semester as the math course.

Eight Steps to Understanding Reading materials

There are several appropriate steps in reading a math textbook:

Step 1 - Skim the assigned reading material. Skim the material to get the general idea about the major topics. Read the chapter introduction and each section summary. You do not want to learn the material at this time; you simply want to get an overview of the assignment. Then think about similar math topics that you already know.

Example: Skimming will allow you to see if problems presented in one chapter section are further explained in the next chapter sections.

Step 2 - As you skim the chapter, circle (using pencil) the new words that you do not understand. If you do not understand these new words after reading the assignment, then ask the instructor for help. Skimming the reading assignments should take only five to 10 minutes.

Step 3 - Put all your concentration into reading. While reading the textbook, highlight the material that is important to you. However, do not highlight more than 50 percent of a page because the material is not being narrowed down enough for future study. Especially highlight the material that is also discussed in the lecture. Material discussed both in the textbook and lecture usually appears on the test. The purpose for highlighting is to emphasize the important material for future study. Do not skip reading assignments.

Remember: Reading a math textbook is very difficult. It might take you half an hour to read and understand just one page.

Step 4 - When you get to the examples, go through each step. If the example skips any steps, make sure you write down each one of those skipped steps in the textbook for better understanding. Later on, when you go back and review, the steps are already filled in. You will understand how each step was completed. Also, by filling in the extra steps, you are starting to over learn the material for better recall on future tests.

Step 5 - Mark the concepts and words that you do not know. Maybe you marked them the first time while skimming. If you understand them now, erase the marks. If you do not understand the words or concepts, then reread the page or look them up in the glossary. Try not to read any further until you understand all the words and concepts.

Step 6 - If you do not clearly understand some words or concepts, add these words to the notetaking glossary in the back of your notebook. Your glossary will contain the bold print words that you do not understand. If you have difficulty understanding the bold-print words, ask the instructor for a better explanation. You should know all the words and concepts in your notebook's glossary before taking the test.

Step 7 - If you do not understand the material, follow these eight points, one after the other, until you do understand the material

Point 1 - Go back to the previous page and reread the information to maintain a train of thought.

Point 2 - Read ahead to the next page to discover if any additional information better explains the misunderstood material.

Point 3 - Locate and review any diagrams, examples or rules that explain the misunderstood material.

Point 4 - Read the misunderstood paragraph(s) several times aloud to better understand their meaning.

Point 5 - Refer to your math notes for a better explanation of the misunderstood material.

Point 6 - Refer to another math textbook, computer software program or video tape that expands the explanation of the misunderstood material.

Point 7 - Define exactly what you do not understand and call your study buddy for help. *Point 8* - Contact your math tutor or math instructor for help in understanding the material.

Step 8 - Reflect on what you have read. Combine what you already know with the new information that you just read. Think about how this new information enhances your math knowledge. Prepare questions for your instructor on the confusing information. Ask those questions at the next class meeting.

By using this reading technique, you have narrowed down the important material to be learned. You have skimmed the textbook to get an overview of the assignment. You have carefully read the material and highlighted the important parts. You then added to your notetaking glossary unknown words or concepts.

Remember: The highlighted material should be reviewed before doing the homework problems, and the glossary has to be learned 100 percent before taking the test.

Reference:

Paul D. Nolting, Ph.D., *Winning at Math*, 1997