

Tips for Reading Your Mathematics Textbook

1. *Read the preface of your textbook.* There's usually advice there for students about reading the textbook that addresses features of your particular textbook.
2. *Read the narrative of each section.* Most sections' narratives are designed to be read from beginning to end. The examples, in particular, are supposed to illustrate ideas and make them concrete – not just serve as templates for homework exercises.¹
3. *Read the pictures.* The pictures in your textbook are not "illustrations" or "decorations." Pictures are everywhere in your book, sometimes even in the middle of sentences. That's intentional: graphs are an important part of the language of calculus.²
4. *Pay careful attention to vocabulary.* Mathematics is not a "natural language" like English or French, but it has its own vocabulary and usage rules. Words like *theorem*, *rate*, *amount*, *concave*, and *stationary point* have precise, agreed-upon mathematical meanings. Understanding such words goes a long way toward understanding the mathematics they convey; misunderstanding the words leads inevitably to confusion.³
5. *Read with pencil and paper (and maybe a graphing calculator) handy.* Sure, you believe your textbook, but check the work you see there anyway. You don't learn difficult material just by reading a nice presentation of the material – you need to break out pencil and paper and convince yourself that you follow the reasoning and computations. You might even try to work out examples *before* looking at their solutions in the textbook.
6. *Don't bother highlighting.* Math textbooks generally use page layout, fonts, and colors very well to organize information. There's usually little use in highlighting or underlining your textbook yourself.
7. *Read before class.* When reading your textbook before class, write down a few questions you would like to see answered in class. Make sure to get them answered in class.
8. *Be efficient when taking notes.* By reading your textbook before class, you won't have to take as many notes in class since you'll know what definitions, theorems, and examples are already available in your textbook. "Since you have already paid for an expensive printed copy of the material, there is no need to acquire a hastily hand-written copy as well."⁴
9. *Read after class.* Identify concepts and examples that are still unclear, and look to your textbook for clarification. As you work on your homework, refer to your textbook for explanations and useful examples.
10. *Read and re-read.* Keep re-reading (either before or after class) until understanding is gained. Sometimes read linearly through the material, other times skip around trying to follow your own thoughts.

¹ Ostebee and Zorn, *Calculus from Graphical, Numerical, and Symbolic Points of View*, Houghton Mifflin, 2001.

² Ibid.

³ Ibid.

⁴ Matthew Saltzman and Marie Coffin, "How to Survive Your College Math Class (and Take Home Something of Value)," <http://www.ces.clemson.edu/%7Emjs/courses/misc/study.pdf>.