

(Suggestions for Effectively)

“Read Actively”

# Reading Mathematics

1. When confronted with the task of reading a piece of mathematical text, **skim** the entire reading first to discern its general outline and to identify its main points and objectives.
2. If necessary, review earlier portions of the textbook (or prior mathematical topics studied) to recall forgotten or unfamiliar vocabulary, techniques or theorems before attempting a thorough reading of the current text.
3. **Don't rush!** Read slowly! Mathematical writing is typically dense with ideas. Spend as much time as necessary to understand the fully intended meaning of each of the author's arguments and examples.
4. Pay particular attention to the *precise* statement of new definitions and theorems.
5. Do not immediately skip over a portion of the reading that doesn't make sense in the hope that its meaning will become more apparent later. Because of the linear nature of mathematical writing in which one topic builds from those that precede it, it is very important to fully understand one topic before proceeding to the next.
6. Try to identify the cause of any misunderstanding of the topics being studied. Consider all reasonable methods to resolve the misunderstanding. Whenever possible discuss difficult portions of the text with a friend, study partner, or study group.
7. If all else fails, make sure to mark any portions of the text that remain perplexing so that you may raise these issues subsequently in class.
8. Occasionally authors will intentionally leave some details of arguments or examples to the reader to complete as an exercise. Authors do this for pedagogical reasons and not laziness! As a useful check on your understanding of the material, always fill-in in the details omitted by the author.
9. Always keep pencil and paper handy whenever reading mathematical text. It can be very helpful to highlight important passages, insert marginal notes to yourself (a la Fermat!), and make simple calculations while involved in the reading of the text.
10. Examples in textbooks often come with a moral. Discern the author's main point in providing the example. Make sure you struggle to understand every aspect of the computation, manipulation, or procedure presented in the example.