MA 52, Section 1
Reading Your Textbook

Reading mathematics is an active, not a passive, endeavour. This is particularly so for our text, which is organised by "Definitions" and "Facts" (more commonly known as *theorems*), as well as "Examples". As you read your textbook, you should be stopping to ask yourself questions to test your own understanding. This is a skill that takes time to develop, so here are some beginning strategies:

1. **After reading a DEFINITION,** stop to *come up with an example of something which satisfies* the definition. Also *come up with an example or two of things which don't*, and ponder which part(s) of the definition they fail.

2. **After reading a FACT,** stop to *review the reasoning* used to reach the conclusion stated in the Fact. Often this is contained in the paragraphs you just finished reading, but sometimes it is listed afterward in a more formal "Proof". *Isolate the main steps* of the reasoning, and note these in the margin. Take careful *note of the hypotheses* of the theorem, and try to *invent examples* which don't satisfy the conclusion, and evaluate which of the hypotheses they fail (if they fail the conclusion, they *must* fail one of the hypotheses). Sometimes the textbook just gives a few examples as a means of convincing you of a Fact. If this is the case, and especially if you are interested in pursuing mathematics at a higher level, you can try to come up with a proof by yourself (but this is not required for the course).

3. **When you come upon an EXAMPLE,** read the problem and then *try to work out the solution by yourself* before you continue reading. If you can't do it, then try to *outline the ideas that will be used* in the solution, based on what you just read, and note these in the margin. Then, as you read the solution, *compare* your ideas to their solution method.

4. To save time later, and to get a head start on your learning, **make a review sheet** listing the Definitions and Facts from your reading righ when you finish. Commit these to memory right away, and then look for them during lecture.