

LaTeX and SNB

More than in previous classes, this semester students are turning in their home work as PDF files, originally produced by word processors like MS Word.

For mathematics and all natural sciences, only LaTeX is the universally used word processor. LaTeX was created by L. Lamport and is based on TeX. TeX was created by Donald Knuth in order to typeset his books on "The Art of Programming". LaTeX is much easier to learn as TeX. A LaTeX document is an ASCII file and can be produced and read by any text editor. It is human readable. A LaTeX document then is like a computer program that needs a compiler to produce a document with mathematical symbols. A piece of the code, like α gives you as output the Greek letter α . In LaTeX mathematical expressions are enclosed in $\$$ -signs. Paragraphs are tagged as "definitions, theorems, proofs" etc. In LaTeX this is done with: `\begin{definition}` The map $T: U \rightarrow V$ is linear if $T(\alpha + \beta) = T(\alpha) + T(\beta)$ `\end{definition}`.

In our textbook, a paragraph that defines something, is indented, the word "Definition" is printed in bold and ends with a period. The definition itself is printed in italics. The author doesn't have to know this. Any LaTeX document states at its beginning a document class. Like `\documentclass{article}` may be the first line of a LaTeX document. It contains details how definitions, theorems, proofs etc. are printed, but also what page dimensions, margins etc. are.

SNB is a front-end for LaTeX; Math is not enclosed in $\$$ -signs but is declared as something in math-mode, and appears on screen in red. Math is compiled in real time. It is saved as a LaTeX document. If you open an SNB file in word you will see that. In SNB, you can create a new file by declaring a class, like as article, book etc. For homework, I suggested "general" .

In MS Word, math expressions are treated like pictures. Newer versions of Word can read documents which have been prepared by older versions of Word. But math expressions then cannot be edited, e.g., changed.

Word document where math has been created by the equation editor, or mathtype, are much larger than LaTeX document.

As we know, SNB not only produces LaTeX files but can compute (or even graph) math expressions. Like finding the row-echelon form of a matrix. SNB comes with built-in mathematical software. This is especially useful for a course like Linear Algebra.

SNB 5.5 is very different from SNB 6 For SNB 6 saving a file in LaTeX is an option. The default file format is proprietary and called .sci. It cannot be read by any other program. If you haven't save your files in LaTeX then they become useless if you don't have SNB anymore. While LaTeX files can be opened and compiled by any TeX program. SNB 6 has many bugs and crashes easily. That is why I recommended for Windows users to download SNB 5.5 with the purchase of SNB 6. Students agreed who did that.

Hope my comments are helpful.