

Latex – Week 8

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1 Margins and Other Formatting

Today we will play with formatting, using this very tex file as our sample.

Go to my webpage

<http://www.csupomona.edu/~bngivens/mat599/math599.html>

and download the file Week8Notes.tex. Save it to the student work folder or your flash drive.

1.1 The Document Class command

We’ve already seen that by changing the document class to slides or report you can change the look of a file. Experiment by changing the word “article” to “report”, “book”, or “amsart”. All four produce a paper, but they have different margins and different looks. Also, I’ve used the `\maketitle` command (look just above and just below the `\begin{document}`) and all four handle the title, date, and author differently.

You can also try changing some of the options. We’ve already changed 11pt to 12pt. You can also use the options

```
\documentclass[11pt, twoside]{article}
\documentclass[11pt, twocolumn]{article}
```

1.2 Packages

Another way to change the look of your document is to use a predefined package. A package is a style file, which should have the suffix *.sty*. We’ve already used style files for some of the math symbols by typing

```
\usepackage{amssymb, amsmath}
```

This command tells Latex to look in the files `amssymb.sty`, `amsmath.sty` for further instructions. The `\usepackage` commands must be in the preamble and traditionally are list first thing, right after the `\documentclass` declaration.

In the `Week8Notes` file, add the line `\usepackage{a4}` right after the other `\usepackage` commands. This changes the formatting to fit A4 size paper (used in Europe). I hope that at some point in the future we may have a style file called `calpolythesis.sty`, but sadly I have not yet written such a file.

1.3 Page Styles

Page styles refers to the look of the head, the body, and foot, including any running headers along the top of each page and the numbering system for the pages. A sample of some commands:

```
\pagenumbering{arabic}
\pagenumbering{roman}
\pagenumbering{Roman}
\pagenumbering{alph}
\pagenumbering{Alph}
```

This command can be put in the preamble, where it will apply to the whole document. Or you can put a `\pagenumbering` command in the body and it will apply the new page numbering from that page on. It will also reset the page number back to one, so be sure this is what you want!

```
\pagestyle{plain}
\pagestyle{empty}
\pagestyle{headings}
\pagestyle{myheadings}
```

This command goes in the preamble and applies to the whole document. It affects the location and style of the numbering and headings. If you choose the `myheadings` option, you have to set the headings yourself. Right after the `\pagestyle{myheadings}`, type

```
\markright{Berit is the Greatest!}
```

Now try deleting the `\markright` command and replacing it with

```
\markboth{I love Latex}{Berit Givens}
```

You may or may not see both statements in the headers. This depends on what document class you are in. Try again changing between article, report, amsart, and book and using the options of twoside and twocolumn.

1.4 Setting the margins and lengths yourself

Look at the figure photocopied from Lamport's book, page 182. If you do not have the book or the figure, a similar figure is available at <http://www.iam.ubc.ca/newbury/tex/page-set-up.html#margins>

Each of those commands, like `\textheight` or `\oddsidemargin`, is basically set to a default number by Latex. You can change them by typing something like

```
\textwidth = 6.5in
```

in your preamble. I have standard margin setting commands in my preamble. Right now they should all be commented out, but if you go and get rid of the percent sign at the beginning of those lines, this file should start to look more like what you are holding in your hand.

The lengths you can use are `in` for inches, `cm` for centimeters, `mm` for millimeters, `pt` for point, `em` for the width of a capital M, and `ex` for the height of a lower case x. You can also use the commands themselves to get their values. For example, I could use the graphics command

```
\includegraphics[width=\textwidth]{exam2ellipse.jpg}
```

Instead of specifically telling it how many inches it should be, this command just sets it to whatever the current value of `\textwidth` is.

Some other useful lengths are `\parindent` and `\parskip`. Consult the Leslie Lamport book for other lengths. Some of these lengths can only be set in the preamble, while others can be modified at any time in the body of your document.

2 Goodbye and Happy Typing!

In the flyer for this class I had fun writing Cal Poly Pomona with mathematical symbols:

$$C \alpha \int P \circ \int \gamma P \emptyset m 0 \cap \alpha$$

What can you write?