A BRIEF INTRODUCTION TO LaTeX

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1. INTRODUCTION

In Math 491 you are required to use LaTeX for your project. LaTeX is a typesetting program used in mathematics. The purpose of this very brief note is simply to get you started. There are numerous resources for LaTeX and some can be found on Blackboard. Probably the most effective way to learn how to use LaTeX is to look at examples and mimic these using the system yourself.

2. WHERE TO GET LaTeX?

LaTeX distributions and instructions can be found on the following web-page:

`http://www.latex-project.org/ftp.html`

You will need to select the version corresponding to your operating system. You should be aware that it can take a long time to download if you are using Windows.

If you do not want to install LaTeX on your computer, then you can also use an online editor such as Overleaf:

`https://www.overleaf.com/`

3. WHAT IS LaTeX?

LaTeX is a typesetting program that is very practical for typing mathematics. Typing equations in other systems like Word is very difficult and time-consuming, but quite easy to do in LaTeX once you have some experience. The fastest way to learn LaTeX is to work from an example, or try a tutorial on-line.

To use LaTeX you first open a new file with a text editor (depending on what system you are using). In this file, you enter the LaTeX commands. When naming this LaTeX document, the name of the file should end with .tex

As an example, let's make a file called `example.tex`. In the file we type the following commands:

```
\documentclass{amsart}

\begin{document}

Hello Math 491!  This is our first example of a \LaTeX\ document.

Here are some simple mathematical sentences:

\[4^2+3=19\]

and
```

```
\[\frac{\pi^3}{x^{10}+3}\]

\end{document}
```

The next step is to compile the file – LaTeX will take this information and use it to build the output file. How you compile the file will depend on the operating system of your choice. When the file is compiled, new files will be created such as `example.log`, `example.aux`, and `example.pdf`.

When you view `example.pdf`, you will see

Hello Math 491! This is our first example of a LaTeX document.

Here are some simple mathematical sentences:

$$4^2 + 3 = 19$$

and

$$\frac{\pi^3}{x^{10} + 3}$$

You are now ready to start working with LaTeX. More examples will be provided in the upcoming class meetings. Take the next few weeks to familiarize yourself with the system and have fun!

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