

## Math 310 Project: Online Dating the Mathematicians' Way

To begin this project, we'll familiarize ourselves with a mathematical typesetting program called  $\text{\LaTeX}$ . I suggest using Share $\text{\LaTeX}$ : you can create a free account and get started at <http://www.sharelatex.com>.

The best way to learn  $\text{\LaTeX}$  is by jumping in and trying it out. There are tons of tutorials, in addition to simply using Google to search for what you're trying to do, but here are a couple I've found particularly useful:

1. <http://www.rpi.edu/dept/arc/training/latex/class-slides-pc.pdf>
2. [https://www.sharelatex.com/learn/Main\\_Page](https://www.sharelatex.com/learn/Main_Page)
3. [http://faculty.winthrop.edu/abernathyk/tex\\_intro.pdf](http://faculty.winthrop.edu/abernathyk/tex_intro.pdf)
4. <http://faculty.winthrop.edu/abernathyk/Symbols.pdf>
5. <http://detexify.kirelabs.org/classify.html>

Don't feel like you have to read and/or understand everything; the purpose of this is to just get you started! I will also begin to put .tex as well as .pdf documents on our course website so you can see the  $\text{\LaTeX}$  formatting of our class worksheets.

Once you feel you've gotten some of the basics of  $\text{\LaTeX}$  down, we'll begin our adventure into the world of online dating. We wish to start a dating site for mathematicians, called MathMate. Of course, we'll need a mathematical procedure for picking matches. Lucky for us, we can use truth tables to screen users' compatibility. To test our system, each of you should create at least three statements that characterizes someone you would be interested in dating. Given these statements, create the beginnings of a truth table, filling in the initial columns for each statement. Then, reading across the rows, consider if you would date a person with those characteristics. For example, if the characteristics were brown hair, a Ph.D. in math, and likes cats, and the row was TFT, would you be willing to meet a brown haired cat lover who doesn't have a Ph.D. in math? Once you have your "dating criterion" column, use logical connectives to create a statement that summarizes your standards. Finally, type up the statements and create the truth table using  $\text{\LaTeX}$ .