

## Overview

LaTeX is the industry-standard tool for typesetting mathematics. It is free, easy to use, employed by the vast majority of professional mathematicians, and enjoys vast online resources and extensions of all kinds. In brief, you create a plain text file that includes codes for various things you would want to do in a math document (standard symbols, superscripts and subscripts, fonts, fractions, integral signs, matrices, aligned equations, diagrams, figures. . . ) and then tell LaTeX to convert it into PDF.

## Getting Started

The quickest way to get started is to create a free account on one of the many [online LaTeX editors](#). The one I use is [Overleaf](#) (no endorsement is intended or implied). You can also [install LaTeX on your own computer](#), which gives you offline editing ability and more control over the environment.

## Online Resources

If you don't know how to typeset, say, a matrix in LaTeX, just Google “matrix latex” and you will find lots of examples. If you want a systematic intro, try starting with [The LaTeX Project](#). Many of the online editors include tutorials. One very useful site for figuring out the LaTeX codes for symbols is [DeTeXify](#). There is also an active [section of StackExchange devoted to LaTeX](#).

## Figures

For creating figures within a LaTeX document, I use <http://www.texample.net/tikz>. Other good resources for TikZ include the [Overleaf TikZ introduction](#) and [this very good brief introduction](#). Some people swear by [Ipe](#), which lets you convert your own drawings into LaTeX code. It is also possible to insert figures in standard formats (JPEG, PNG, etc.) into LaTeX documents, but in general one should *not* do this with scanned hand-drawn figures — it's worth taking the time to make it look professional.

## LaTeX in Math 725

*All problem sets and other submissions in Math 725 must be typeset in LaTeX.* If you are using Overleaf, you can make a project for your Math 725 files (include your last name in the project name) and share it with me. Alternatively, you can email me the PDF file, using a filename that includes your last name and the problem set number.

Please download the [zipfile](#) with lots of LaTeX resources for students in Math 725, including a header file with lots of useful macros (feel free to use and/or modify it in your own work).