

My CO 480 Project

by

Group No### (Replace the # with the three digit number eg. 001 or
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1 Macros

Typing in \mathbb{Z} can be a pain. You can create a macro to help! Type in `\newcommand{\bZ}{\mathbb{Z}}`

Then you can call it \mathbb{Z} to get the same result.

2 LaTeX

There are a bunch of website you can use to have LaTeX online. Two such examples are

1. Overleaf <https://www.overleaf.com/>
2. CoCalc (Formerly SageMathCloud) <https://cocalc.com/>

For your first time, I recommend actually trying to install LaTeX yourself. To do so, follow instructions on

<https://www.latex-tutorial.com/installation/>

You will need to install one of MiKTeX or MacTeX first. Then choose your favourite LaTeX editor (there are lots out there - the first one I used was TeXnicCenter, others liked Winedit, TexShop (what I currently use), even Sublime Text 2 can be outfitted to support LaTeX if you so choose). Compile and hope for the best! To get all the math to compile correctly, you will need to install lots of packages (see the top - I usually tell my compiler to automatically install the packages so that I don't have to worry). Don't be afraid to ask for help on Piazza! This is your best opportunity to get some help with learning LaTeX. I no longer use any other text editor (this includes Microsoft Word).

3 Testing

This is a test. We know from the Prime Number Theorem [Ahl66, p. 68] that the number of primes grows according to $x/\log x$. One of my favourite algebra books states that algebra is very abstract [DF04].

To make the bibliography show, you might have to compile the file multiple times (say if you're using TeXnicCentre) and/or by trying to find the 'BibTeX compile' feature on your tex editor. For example, mine in TexShop is at the top under Typeset/BibTeX (or Command + shift + B).

See the bibliography file to see how to typeset the bibliography.

Further, to get bibliographies, you can visit MathSciNet (but you must be on a university server - if not use a VPN to log into to Waterloo's internet services) via

`<http://www.ams.org/mathscinet/index.html>`

and by typing in the author's name and title, you can often get a fully created bibtex ready file to copy and paste into your bibliography. Try it with "Andrew Wiles" and title "Modular Elliptic Curves", click on the MR number, then near the top left, click on "select alternative format" and select "bibtex".

Diophantus wrote Arithmetica [Hea64]

```
x = 4 * 7
y = sin(x)
\begin{happy}
more words
\end{happy}
```

Here is a webpage reference [OR99] (Check out the bibliography file to see how to keep the name capitalized in the bibliography by putting braces around the proper noun) and here is an article reference [LJ02].

Bibliography

- [Ahl66] Lars V. Ahlfors. *Complex analysis: An introduction of the theory of analytic functions of one complex variable*. Second edition. McGraw-Hill Book Co., New York, 1966.
- [DF04] David S. Dummit and Richard M. Foote. *Abstract algebra*. John Wiley & Sons Inc., Hoboken, NJ, third edition, 2004.
This is a note.
- [Hea64] Thomas L. Heath. *Diophantus of Alexandria: A study in the history of Greek algebra*. Second edition. With a supplement containing an account of Fermat's theorems and problems connected with Diophantine analysis and some solutions of Diophantine problems by Euler. Dover Publications, Inc., New York, 1964. Note to self: I am Awesome!
- [LJ02] H. W. Lenstra Jr. Solving the Pell equation. *Notices Amer. Math. Soc.*, 49(2):182–192, 2002.
- [MV07] Hugh L. Montgomery and Robert C. Vaughan. *Multiplicative number theory. I. Classical theory*, volume 97 of *Cambridge Studies in Advanced Mathematics*. Cambridge University Press, Cambridge, 2007.
- [OR99] J. J. O'Connor and E.F. Robertson. Adrien-Marie Legendre. <http://www-groups.dcs.st-and.ac.uk/~history/Biographies/Legendre.html>, January 1999. Accessed 2017-06-28.