What is LaTeX?

- A high-quality document *typesetting* system
- Free and open source software (very active)
- Cross-platform: Unix/Linux, Mac, Windows, ...
- Extensible and ultimately customizable
- Flexible: produces PDF, PS, HTML, ...
- Has a 30+ year history and an impressive track record
- Home page: http://www.latex-project.org/

What does it look like?

```
\documentclass{article}

\title{Hello, World!}
\author{Chris Mayfield}
\date{August 31, 2011}

\begin{document}

The statement $\neg p \land (q \lor \neg r)$
doesn't make sense.

But I do understand $-b \pm \sqrt{b^2 - 4ac} \over 2a$.

\end{document}
```

The statement $\neg p \land (q \lor \neg r)$ doesn't make sense.

But I do understand $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$.

LaTeX vs Word

LaTeX

- Typesetting system
- Separation of content & style
- Free of charge (open source)
- Scientific features: math mode, bibliography, packages, ...
- Complete control of output
- Beautiful documents (fonts, ligatures, spacing, hyphenation)

Word

- Word processor
- WYSIWYG
- Insanely expensive!
- Lots of menus, toolbars, mouse clicks
- Anomalies / crashes
- Hmm...

The Basics

- Most whitespace doesn't matter.
- LaTeX commands start with a \ character.
- Comments begin with a % symbol.
- These characters need to be escaped: # $ % ^ & _ { } ~ \

```
% This line is a comment...
Man, I got 74\% on my final exam!
```

- The $ symbol turns on/off math mode:

```
$-b \pm \sqrt{b^2 - 4ac} \over 2a$
```

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Installing LaTeX at home

Linux

- Just install the texlive package

Mac

- http://www.tug.org/mactex/ (2.1 GB!)

Windows

- http://www.miktex.org/ (153 MB)
- http://www.tug.org/protext/ (750 MB!)

Editors

Recommended

- Texmaker http://www.xm1math.net/texmaker/

Manual

- Any text editor + command line tools
- What happens "behind the scenes"

Many others!

- TeXworks, TeXnicCenter, TeXshop, Kile, ...
- Plugins for NetBeans, Eclipse, ...

Ready, Set, Learn!

Tutorials

- "Official" Documentation
  http://www.latex-project.org/guides/
- Getting Started with LaTeX
  http://www.maths.tcd.ie/ dwilkins/LaTeXPrimer/

References

- LaTeX Reference Manual
  http://latex.computersci.org/Reference/Reference
- Hypertext Help with LaTeX
  http://www.giss.nasa.gov/tools/latex/
- LaTeX Cheat Sheet
  http://www.stdout.org/ winston/latex/