

What is L^AT_EX?

- ▶ 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 $\neg p \wedge (q \vee \neg r)$ doesn't make sense.

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

```
\end{document}
```

The statement $\neg p \wedge (q \vee \neg r)$ 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.xmlmath.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://texdoc.net/texmf-dist/doc/latex/latex2e-help-texinfo/latex2e.pdf>
- ▶ Hypertext Help with LaTeX
<http://www.giss.nasa.gov/tools/latex/>
- ▶ LaTeX Cheat Sheet
<http://www.stdout.org/~winston/latex/>