CISC 102: Discrete Mathematics for Computing I

Fall 2020

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Introduction to LaTeX

Slides are borrowed from Nobel Khandaker

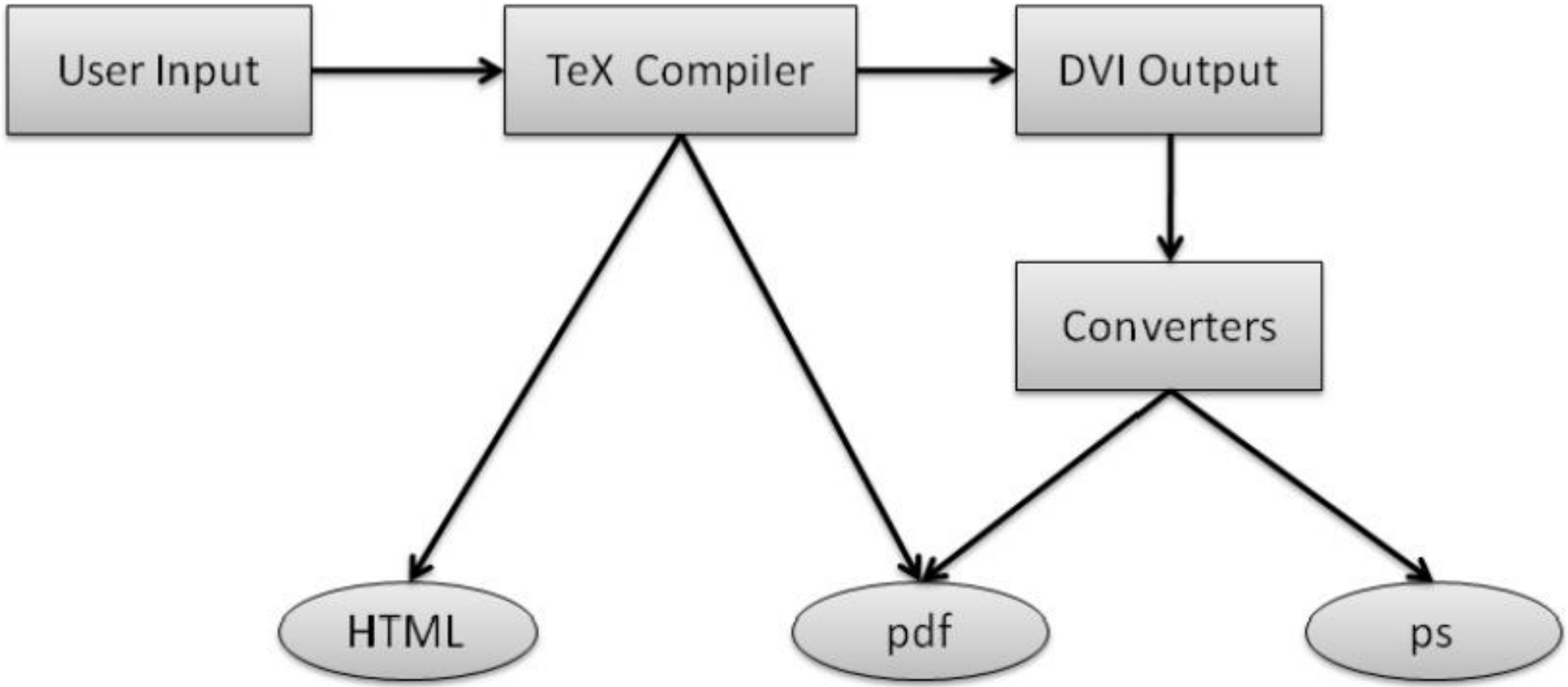
What is LaTeX?

- LaTeX is a document preparation system for high-quality typesetting
- LaTeX is most often used to produce technical or scientific documents, but it can be used for almost any form of publishing

Why use LaTeX?

- Professional result
- Platform, version independent (Unix, Windows . . .)
- Pre-set standard formats (for paper, thesis . . .)
- Fast, professional math equations typesetting
- Freely available

Basic LaTeX Work Flow I



What Do You Need to Process a LaTeX Document?

Queen's University

LaTeX Editor

- Linux: Kile, Emacs
- Windows: TeXworks, TexMaker, LyX
- Mac: TeXworks, LyX, Emacs

LaTeX Compiler

Linux: LaTex, TexLive

Windows: MikTeX

Mac: TeXshop

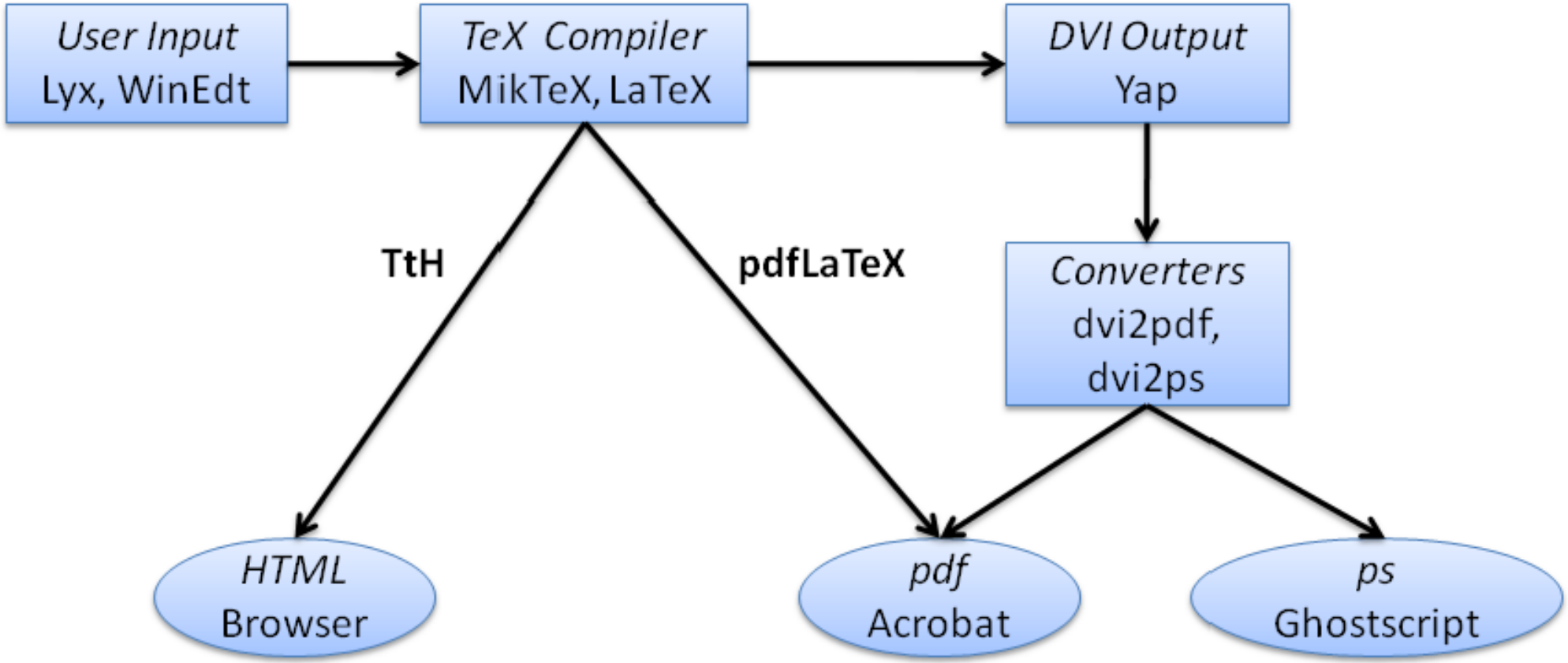
LaTeX Output Viewer

PDF: xpdf, Foxit, Adobe Reader

PS: Ghostscript, GhostView

HTML: Web Browser

Basic LaTeX Work Flow II



Hello World in LaTeX

```
\documentclass [12pt,letterpaper]{article}
%include packages here
%usepackage{package}
\begin{document}
Hello world!
\end{document}
```

Basic Formatting in LaTeX

- **Bold Text**: \textbf{Bold Text }
- *Italic Text*: \emph{Italic Text }
- Spacing:
  - Many spaces = one space
  - Use \\for newline
  - Hit return *twice* for a new paragraph
  - \newpage
- Comments: % . . . your comments here . . .
- Reserved Symbols: # $ % ^ & _ { } ~ \

Mathematical Equations in LaTeX

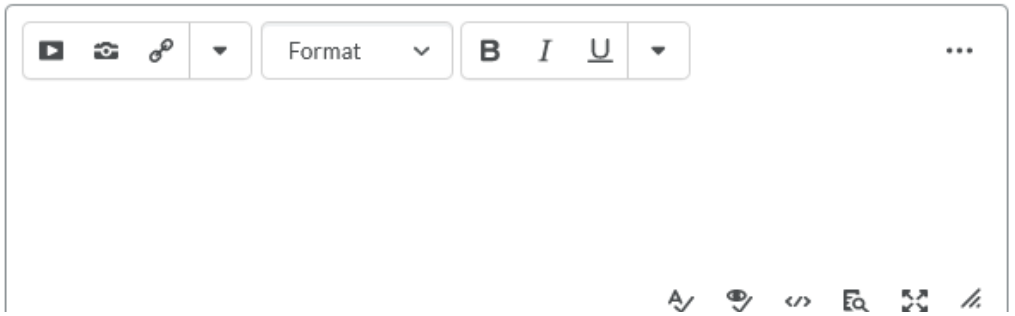
- Use \$ . . . \$ or \begin{math} . . . \end{math} for include mathematical symbols, equations, etc.
- Subscript and superscripts — x^2: x^2 and x_2: x_2
- Fractions— \frac{a}{b} or \$a \over b\$: $\frac{a}{b}$
- Radical— \sqrt{x}: $\sqrt{x}$
- Many more symbols and operators are available

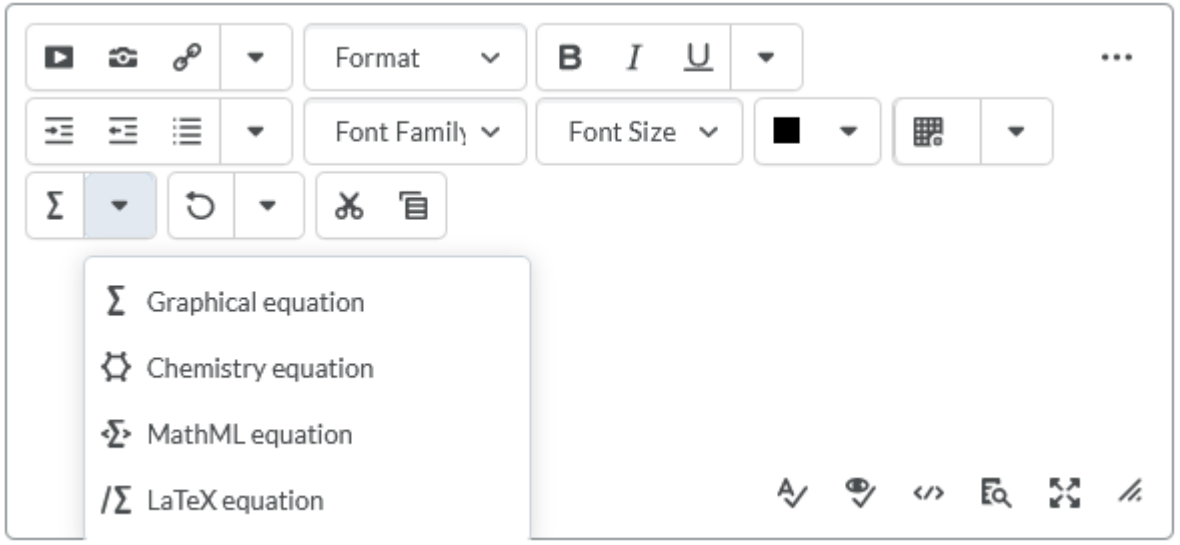
LaTeX on OnQ

Preview Question

When taking the question, it would appear as:

If $[|A| = 21, |B| = 19, |C| = 17, |A \cap B| = 9,]$
$[|A \cap C| = 8, |B \cap C| = 7, |(A \cap B) \setminus C| = 6.]$ find $|A \cup B \cup C|$.





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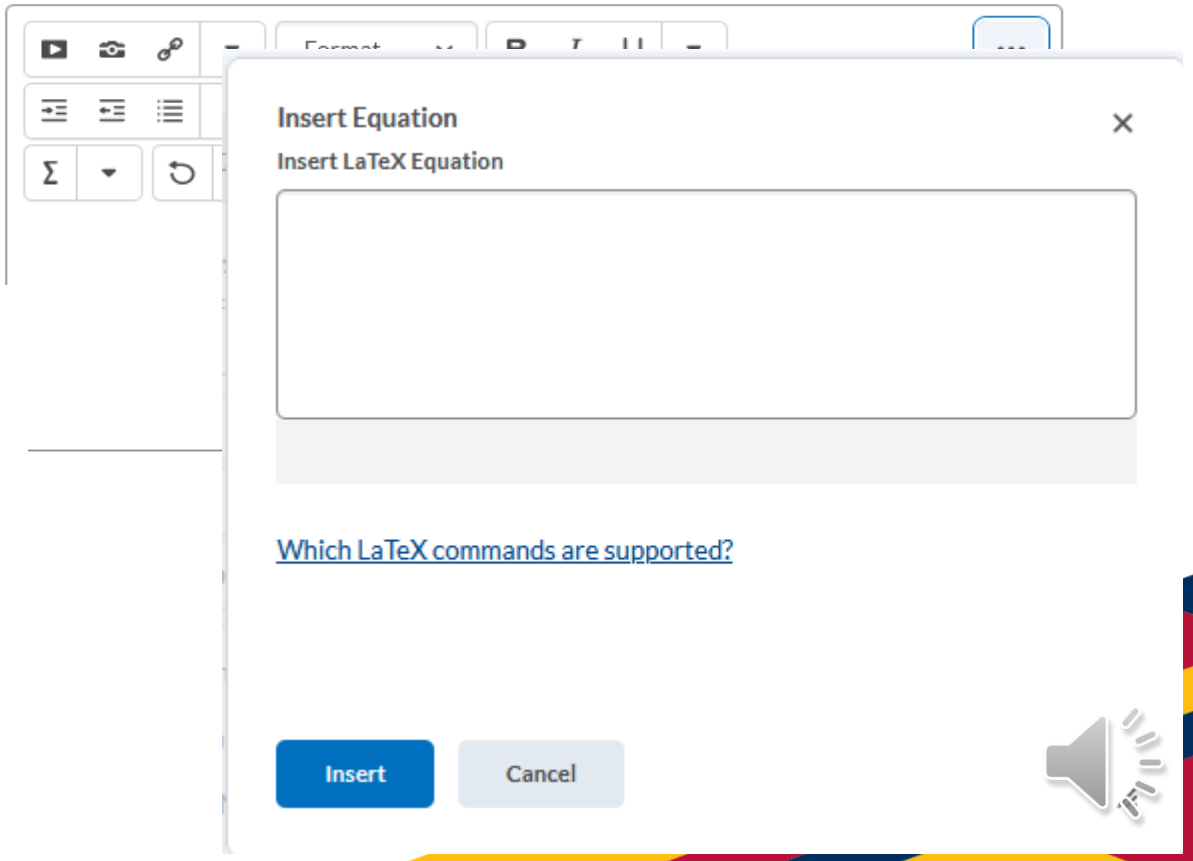

LaTeX Resources

- More one LaTeX math symbols https://artofproblemsolving.com/wiki/index.php/LaTeX:Symbols
- Getting Started with LaTeX https://www.maths.tcd.ie/~dwilkins/LaTeXPrimer/
- LaTeX Quick Reference Card (.pdf)
- MikTeX -- A Windows LaTeX Distro (Includes TeXworks, a LaTeX Frontend)
- MacTeX -- An OS X LaTeX Distro (Includes TeXworks and TeXShop, two LaTeX Frontends)
- Texmaker -- A cross-platform LaTeX editor (includes many nice features)
- LyX -- User Friendly LaTeX Frontend

Happy LaTeXing!

Next Time

What is a “proof”?