Common LaTeX Commands

Line Breaking

`\linebreak` force a line break

`\\[len]` start new line and leave *len* vertical space

`\-` permit hyphenation

`\begin{sloppypar} ... \end{sloppypar}` allow loose lines in paragraphs

`\sloppy` allow loose lines

Page Breaking

`\pagebreak` force a page break

`\enlargethispage*{ht}` squeezes extra *ht* of text on current page.

`\newpage` start a new page

`\clearpage` print all figures and tables and start a new page

Boxes

`\mbox{...}`

`\makebox[len][pos]{...}` make box of width *len*; *pos* puts text at left (l), right (r), or center (default)

`\fbox{text}`

`\framebox[len][pos]{text}` same as `\mbox` or `\makebox` but draws frame around box

`\newsavebox{cmd}` defines *cmd* to be a bin for saving boxes

`\sbox{cmd}{text}`

`\savebox{cmd}[len][pos]{text}` same as `\mbox` or `\makebox` but saves box in bin *cmd*

`\usebox{cmd}` print box saved in bin *cmd*

`\begin{minipage}[pos]{len} ... \end{...}` make parbox of width *len*, aligned by *pos* at top (t), bottom (b), or center (default) line

`\parbox[pos]{len}{...}` same as minipage for small text, no displayed environments

Space

`\hspace{len}` make *len* horizontal space; *-form works even at beginning of line

`\hfill` make infinitely stretchable horizontal space

`\vspace{len}` leave *len* vertical space; *-form works even at beginning of page

Length

units cm   em   ex   in   pc   pt   mm

`\newlength{cmd}` define *cmd* to be a length

`\setlength{cmd}{len}` set length *cmd* to *len*

`\addtolength{cmd}{len}` add *len* to length *cmd*

Pictures

`\begin{picture}(x,y)(x',y') ... \end{...}` $x \times y$ picture [lower-left corner at (x',y')]

`\put(x,y){...}` put object at point (x,y)

`\multiput(x,y)(\Delta x,\Delta y){n}{...}` make *n* copies of object with first at (x,y) and others offset by $(\Delta x, \Delta y)$

`\makebox(x,y)[pos]{...}` make $x \times y$ box; *pos* puts object at top (t), bottom (b), left (l), right (r), and/or centered (default); `\framebox` and `\savebox` have analogs

`\dashbox{d}(x,y)[pos]{...}` like `\makebox` but puts dashed lines of length *d* around box

`\line(h,v){l}` line of slope v/h and horizontal extent *l* (length *l* if $h=0$), $0 \le h,v \le 6$

`\vector(h,v){l}` same as `\line` but draws arrowhead; $0 \le h,v \le 4$

`\frame{...}` draw frame around object

`\oval(x,y)[part]` draw $x \times y$ [partial] oval

`\circle{d}` draw circle of diameter *d*; *-form draws solid disk

`\shortstack[pos]{...}` like `\begin{tabular}[pos]` ...

line thickness `\thinlines` or `\thicklines`

graphics and color Packages

`\scalebox{fac}{...}` scale by factor of *fac*

`\resizebox{wd}{ht}{...}` scale to *wd* × *ht*

`\rotatebox{ang}{...}` rotate by *ang* degrees

`\includegraphics{file}` insert graphics from file

`\definecolor{clr}{mdl}{val}` define color *clr* using color model *mdl*

`\color{clr}` set current color to *clr*

`\textcolor{clr}{...}` typeset in color *clr*

`\colorbox{clr}{...}` typeset on colored box

`\pagecolor{clr}` set background color of page

Figures and Tables

`\begin{figure} ... \end{figure}` make floating figure

`\begin{table} ... \end{table}` make floating table

`\caption{...}` make figure or table caption

tabbing Environment

Rows separated by `\\`; columns determined by:

`\=` set tab stop

`\>` go to next tab stop

`\kill` throw away line

array and tabular Environments

`\begin{array}[pos]{cols} ... \end{array}`

`\begin{tabular}[pos]{cols} ... \end{tabular}` use **array** for formulas, **tabular** for text; items separated by & and rows by `\\`; *pos* aligns with top (t), bottom (b), or center (default); *cols* entries format columns:

l left-justified column

r right-justified column

c centered column

| vertical rule

@{...} text or space between columns

`*{n}{...}` equivalent to *n* copies of ...

`\multicolumn{n}{col}{...}` span next *n* columns with *col* format

`\hline` draw horizontal line between rows

`\cline{i-j}` horizontal line across columns *i–j*

Definitions

`\newcommand{cmd}[n][opt]{...}` define command *cmd* [with *n* arguments] [first optional]

`\newenvironment{nam}[n]{beg}{end}` define environment *nam* [with *n* arguments]

`\newtheorem{nam}{cap}` define a theorem-like environment *nam* captioned by *cap*

Numbering

`\setcounter{ctr}{n}` set counter *ctr* to *n*

`\addtocounter{ctr}{n}` add *n* to counter *ctr*

Sentences and Paragraphs

quotes single `'...'` double `` ``...'' ``

dashes intra-word - number range: -- punctuation: --- sentence-ending period \@.

spacing small \, inter-word \⊔ unbreak-able ~ number \@.

special characters # \# $ \$ & \& % \%

emphasis \emph{...} {\em...}

unbreakable text \mbox{...}

footnotes \footnote{...}

date \today

Type Style

\textrm{...}	Rom	\textsc{...}	CAPS
\textit{...}	*Ital*	\texttt{...}	Type
\textbf{...}	**Bold**	\textsf{...}	SSrf
\textsl{...}	*Slan*		

\boldmath use bold math symbols

in math mode

\mathrm{...}	Rom	\mathtt{...}	Type
\mathit{...}	*Ital*	\mathsf{...}	SSrf
\mathbf{...}	**Bold**	\mathcal{...}	*CAC*

\mathbb{...} ∈ ℕ ℝ

Type Size

\tiny	\small	\large	\huge
\scriptsize	\normalsize	\Large	\Huge
\footnotesize		\LARGE	

Accents and Symbols

ò	\`{o}	õ	\~{o}	ǒ	\v{o}	ç	\c{o}
ó	\'{o}	ō	\={o}	ő	\H{o}	ọ	\d{o}
ô	\^{o}	ȯ	\.{o}	oo	\t{oo}	ọ	\b{o}
ö	\"{o}	ŏ	\u{o}				
†	\dag	§	\S	©	\copyright		
‡	\ddag	¶	\P	£	\pounds		

Sectioning and Table of Contents

\part	\section	\paragraph
\chapter	\subsection	\subparagraph
	\subsubsection	

\appendix start appendix

\tableofcontents make table of contents

Mathematical Formulas

$...$ or \(...\) in-text formula

\[...\] displayed formula \begin{displaymath}

\begin{equation} ... \end{equation} numbered equation

\begin{eqnarray} ... \end{eqnarray} numbered equations, like 3-column array environment; \nonumber omits one equation number, eqnarray* omits all

_{...} subscript

^{...} superscript

' prime (')

\frac{n}{d} print fraction $\frac{n}{d}$

\sqrt[n]{arg} print $\sqrt[n]{arg}$

ellipsis \ldots ... \cdots ... \vdots : \ddots ⋱

Greek letters α \alpha ... Ω \Omega **symbols** see Tables 3.4–3.8 (pp. 42–44)

delimiters \left or \right followed by delimiter from Table 3.10 (p. 47)

\overline{exp} print $\overline{exp}$

space thin \, medium \: thick \; negative thin \!

Displayed Paragraphs

\begin{quote} ... \end{quote} short displayed quotation

\begin{quotation} ... \end{quotation} long displayed quotation

\begin{center} ... \end{center} centered lines, separated by \\

\begin{verse} ... \end{verse} \\ between lines, blank line between stanzas

\begin{verbatim} ... \end{verbatim} in typewriter font exactly as formatted

Lists

Begin each item with \item or \item[label]

\begin{itemize} ... \end{itemize} "ticked" items

\begin{enumerate} ... \end{enumerate} numbered items

\begin{description} ... \end{description} labeled items

Common LaTeX Commands

Document Class, Packages, Styles

\documentclass[options]{class}

style article report book slides letter (for letters)

options 11pt titlepage twoside leqno 12pt twocolumn a4paper fleqn

\usepackage[options]{pkg}

pkg amstex color latexsym babel graphics makeidx

\pagestyle{style} style of head and foot: plain empty headings myheadings

\pagenumbering{style} style of page numbers: arabic roman alph Roman Alph

Title Page and Abstract

\maketitle make title with information declared by \title, \author, and [optional] \date

\begin{titlepage} ... \end{titlepage} do-it-yourself title page

\begin{abstract} ... \end{abstract} make abstract

Cross-Reference

\label{key} assign current counter value to *key*

\ref{key} print value assigned to *key* \pageref{key} ... (1.1)(14)

\cite[note]{keys} cite reference(s) *keys* [with added *note*]

Bibliography and Citation

\bibliography{...} make bibliography and tell BibTeX names of bib files

\begin{thebibliography}{lbl} ... \end{...} make bibliography; *lbl* is widest entry label

\bibitem[lbl]{key} begin bibliography entry for citation *key* [with *lbl* as label]

Splitting the Input

\input{file} read specified file

\include{file} read specified file unless excluded by \includeonly

\includeonly{files} exclude any file not in *files*

\begin{filecontents}{file} *contents* \end{...} write *contents* on specified file