\LaTeX
document summary

This listing contains short descriptions of the control sequences that are likely to be handy for users of \LaTeX v2.09 layered on \TeX v2.0. Some of these commands are \LaTeX macros, while others belong to plain \TeX; no attempt to differentiate them is made.

\begin{itemize}
  \item \texttt{\__} is ordinary space after period.
  \item \texttt{\!} -- negative thin space = \( -\frac{1}{6}\) quad;
    \texttt{xx\!} yields \( xx \) (math mode).
  \item \" makes an umlaut, as \ö.
  \item \# prints a pound sign: #.
  \item \$ prints a dollar sign: $.
  \item \% prints a percent sign: %.
  \item \& prints an ampersand: &.
  \item \' in tabbing environment moves current column to the right of the previous column. Elsewhere, acute accent, as ò.
  \item ( -- start math mode. Same as \texttt{\begin{math}} or $.
  \item ) -- end math mode. Same as \texttt{\end{math}} or $.
  \item * is a discretionary multiplication sign, at which a line break is allowed.
  \item + moves left margin to the right by one tab stop. Begin tabbed line.
  \item , -- thin space = \( \frac{1}{7}\) quad; \texttt{xx\,x} yields \( xx \) \( x \). It is not restricted to math mode.
  \item - in tabbing environment, moves left margin to the left by one tab stop. Elsewhere, optional hyphenation.
  \item . puts a dot accent over a letter, as ò.
  \item / inserts italics adjustment space.
  \item : -- medium space = \( \frac{2}{9}\) quad; \texttt{xx:} yields \( xx \) \( x \) (math mode).
  \item ; -- thick space = \( \frac{5}{18}\) quad; \texttt{xx;} yields \( xx \) \( x \) (math mode).
  \item < in tabbing environment, puts text to left of local left margin.
  \item = in tabbing environment, sets a tab stop. Elsewhere, makes a macron accent, as ò.
  \item > in tabbing environment is a forward tab. Otherwise, medium space = \( \frac{2}{9}\) quad (math mode).
  \item \( \emptyset \) declares the period that follows is to be a sentence-ending period.
  \item \( [ \) -- same as \texttt{\begin{displaymath}} or $$.
  \item \( \} \) terminates a line, but disallows a pagebreak.
  \item \( \] \) -- same as \texttt{\end{displaymath}} or $$.
  \item ^ makes a circumflex, as ô.
  \item _ is an underscore, as in \texttt{hours_worked}.
  \item \` in tabbing environment moves all text which follows (up to \( \} \)) to the right margin. Elsewhere, grave accent, as ò.
  \item \{ prints a curly left brace: {.
  \item \} prints a curly right brace: }.
  \item ^ makes a tilde, as ñ.
  \item \a’ makes an acute accent in tabbing environment, as ò.
  \item \a’ makes a grave accent in tabbing environment, as ô.
  \item \a= makes a macron accent in tabbing environment, as ô.
  \item \aa is á. \texttt{\AA} is Å.
  \item \texttt{\acute} makes an acute accent: á (math mode).
  \item \texttt{\addcontentsline{toc}{section}{name}} adds the command \texttt{\contentsline{section}{name}} to the .toc file.
  \item \texttt{\address{text}} declares the return address in the letter document style.
  \item \texttt{\addtocontents{toc}{text}} writes \texttt{text} to the .toc file.
  \item \texttt{\addtocounter{name}{amount}} adds amount to counter \texttt{name}.
  \item \texttt{\addtolength{\nl}{length}} adds length to length command \texttt{\nl}. See also \texttt{\setlength, \newlength, \settowidth}.
  \item \ae is æ. \texttt{\AE} is Å.
  \item \aleph is \( \aleph \) (math mode).
  \item \texttt{\alph{counter}} prints \texttt{counter} as lower-case letters. \texttt{\Alph{counter}} prints upper-case letters.
  \item \texttt{\alpha} is \( \alpha \) (math mode).
  \item \texttt{\amalg} is \( \amalg \) (math mode).
  \item \texttt{\and} separates multiple authors for the \texttt{\maketitle} command.
  \item \texttt{\angle} is \( \angle \) (math mode).
  \item \texttt{\appendix} starts appendices.
  \item \texttt{\approx} is \( \approx \) (math mode).
  \item \texttt{\arabic{counter}} prints \texttt{counter} as arabic numerals 1, 2, etc.
  \item \texttt{\arccos} is \texttt{arccos} (math mode).
  \item \texttt{\arcsin} is \texttt{arcsin} (math mode).
\end{itemize}
\texttt{arctan} is arctan (math mode).
\texttt{arg} is arg (math mode).
\texttt{arraycolsep} — width of the space between columns in an \texttt{array} environment.
\texttt{arrayrulewidth} — width of the rule created in \texttt{tabular} or \texttt{array} environment by \texttt{\hline}, \texttt{\vline}, or \texttt{\vline}.
\texttt{arraystretch} — scale factor for interrow spacing in \texttt{array} and \texttt{tabular} environments.
\texttt{ast} is \ast (math mode).
\texttt{asymp} is \infty (math mode).
\texttt{author\{names\}} declares author(s) for the \texttt{\maketitle} command.
\texttt{b} is a “bar-under” accent, as \bar{a} (math mode).
\texttt{backslash} is \backslash (math mode).
\texttt{bar} puts a macron over a letter: \bar{a} (math mode).
\texttt{baselineskip} — distance from bottom of one line of a paragraph to bottom of the next line.
\texttt{baselinestretch} — factor by which \texttt{baselineskip} is multiplied each time a type size changing command is executed.
\texttt{begin\{environment\}} — always paired with \texttt{end\{environment\}}. Following are the assorted environments.
\texttt{begin\{abstract\}} starts an environment for producing an abstract.
\texttt{begin\{array\}\{lrc\}} starts array environment with 3 columns, left-justified, right-justified, and centered. Separate columns with & and end lines with \textbackslash. \texttt{@\{text\}} between \texttt{l}, \texttt{r} or \texttt{c} arguments puts \texttt{text} between columns.
\texttt{begin\{center\}} starts an environment in which every line is centered. End lines with \textbackslash. \texttt{end\{center\}}.
\texttt{begin\{description\}} starts a labeled list. Items are indicated by \texttt{item\{\text\}}.
\texttt{begin\{displaymath\}} sets mathematics on lines of its own. Same as \textbackslash or \$\$.
\texttt{begin\{document\}} starts the actual text of a document. Required.
\texttt{begin\{enumerate\}} starts a numbered list.
\texttt{begin\{eqnarray\}} starts a \texttt{displaymath} environment in which more than one equation can be accommodated. Separate equations with \textbackslash\textbackslash \textbackslash\textbackslash; use \texttt{\nonumber} to suppress numbering a particular equation.
\texttt{begin\{eqnarray*\}} begins an environment like the \texttt{eqnarray} environment except that the equations aren’t numbered.
\texttt{begin\{equation\}} starts a \texttt{displaymath} environment and adds an equation number.
\begin{theorem} — see \texttt{newtheorem}.
\begin{titlepage} is an environment with no page number, and causes following page to be numbered “1”.
\begin{verbatim} starts an environment which will be typeset exactly as you type it, carriage returns and all, usually in typewriter font.
\begin{verse} starts an environment for poetry with wider margins, no paragraph indenting, and ragged right margin.
\texttt{beta} is $\beta$ (math mode).
\texttt{bf} switches to bold face type.
\texttt{bibitem} creates a bibliography entry \texttt{text}, numbers it, and labels it with reference label \texttt{ref}.
\bibliography{file} — insert bibliography from file name.bib at this point in text.
\bibliographystyle{style} — a format specifier, like \texttt{documentstyle}.
\texttt{bigcap} is $\cap$ (math mode).
\texttt{bigcirc} is $\bigcirc$ (math mode).
\texttt{bigcup} is $\bigcup$ (math mode).
\texttt{bigdot} is $\bigcdot$ (math mode).
\texttt{bigoplus} is $\bigoplus$ (math mode).
\texttt{bigotimes} is $\bigotimes$ (math mode).
\texttt{bigtriangleleft} is $\bigtriangleleft$ (math mode).
\texttt{bigtriangledown} is $\bigtriangledown$ (math mode).
\texttt{biguplus} is $\biguplus$ (math mode).
\texttt{bigskip} — standard “big” vertical skip.
\texttt{bigskipamount} — default length for \texttt{bigskip}.
\texttt{bigsqcup} is $\bigsqcup$ (math mode).
\texttt{bigvee} is $\bigvee$ (math mode).
\texttt{bigwedge} is $\bigwedge$ (math mode).
\texttt{bmod} is binary modulo expression $a \mod m$ (math mode).
\texttt{boldmath} changes math italics and math symbols to boldface. Should be used outside of math mode.
\texttt{bot} is $\bot$ (math mode).
\texttt{bottomfraction} — maximum fraction of page occupied by floats at the bottom.
\texttt{bowtie} is $\bowtie$ (math mode).
\texttt{Box} is $\box$ (math mode).
\texttt{breve} makes a breve accent: $\breve{a}$ (math mode).
\texttt{bullet} is $\bullet$ (math mode).
\texttt{c} is a cedilla, as ç.
\texttt{cal} produces calligraphic letters, as $\mathcal{B}$ (math mode).
\texttt{cap} is $\cap$ (math mode).
\texttt{caption} creates a numbered caption in a \texttt{figure} or \texttt{table} environment. Optional \texttt{loftitle} or \texttt{table} environment. Optional \texttt{loftitle} or \texttt{table} environment.
\texttt{cc} is a list of copy recipients for \texttt{letter} document style.
\texttt{cdot} is $\cdot$ (math mode).
\texttt{cdots} makes three dots centered on the line: \ldots (cf. \texttt{ldots}) (math mode).
\texttt{centering} declares that all text following is to be centered (cf. \texttt{begin} [center]).
\texttt{chapter} begins a new section, automatically headed and numbered. Optional \texttt{toctitle} contains entry for the table of contents if different from \texttt{text}.
\texttt{chapter} produces a chapter number and adds chapter number or table of contents entry.
\texttt{check} makes a háček, as $\check{a}$ (math mode).
\texttt{chi} is $\chi$ (math mode).
\texttt{circ} is $\circ$ (math mode).
\texttt{circle} as a valid argument for \texttt{put} in a \texttt{picture} environment, draws a circle.
\texttt{circle} produces a circle, but draws a solid circle.
\texttt{cite} produces a reference, in square brackets, to a bibliographic item created with \texttt{bibitem}. Optional sub-citation \texttt{subcite} can be inserted in the entry.
\texttt{clearpage} forces next page to be a right-hand, odd-numbered page.
\texttt{clearpage} ends a page where it is, and puts pending figures or tables on separate float pages with no text.
\texttt{cline} draws a horizontal line across columns i through j inclusive in \texttt{array} or \texttt{tabular} environments.
\texttt{closing} declares the closing in \texttt{letter} document style.
\texttt{clubsuit} is $\clubsuit$ (math mode).
\texttt{columnsep} — distance between columns in two-column text.
\texttt{columnseprule} — width of the rule between columns on two-column pages.
\texttt{columnwidth} — width of the current column. Equals \texttt{textwidth} in single-column text.
\texttt{cong} is $\cong$ (math mode).
\texttt{coprod} is $\coprod$ (math mode).
\copyright is ©.
\cos is \cos (math mode).
\cosh is \cosh (math mode).
\cot is \cot (math mode).
\coth is \coth (math mode).
\csc is \csc (math mode).
\cup is ∪ (math mode).
\d is a “dot under” accent, as \varnothing.
\dag is † (math mode).
\dagger is † (math mode).
\dashbox{dww}{width,height}[pos]{text} creates a dashed rectangle around text in a picture environment. Dashes are dww units wide; dimensions of rectangle are width and height; text is positioned at optional pos (see positions on page 8).
\dashv is ⌣ (math mode).
\date{adate} declares the date for the \maketitle command. The default is \today.
\day — current day of the month.
\dblfloatpagefraction — minimum fraction of a float page that must be occupied by floats, for two-column float pages.
\dblfloatsep — distance between floats at the top or bottom of a two-column float page.
\dbltextfloatsep — distance between double-width floats at the top or bottom of a two-column page and the text on that page.
\dbltopfraction — maximum fraction at the top of a two-column page that may be occupied by floats.
\ddag is ‡.
\dagger is † (math mode).
\ddot makes a dieresis over a letter: \ddot{a} (math mode).
\ddots produces a diagonal ellipsis ‚. (math mode).
\deg is \deg (math mode).
\delta is δ. \Delta is Δ (math mode).
\det is \det (math mode).
\diamond is ◊. \Diamond is ◊ (both math mode).
\diamondsuit is ♦ (math mode).
\dim is \dim (math mode).
\displaystyle switches to displaymath or equation environment typesetting (math mode).
\div is ÷ (math mode).
\documentstyle{substy}{sty} determines default font, headings, etc., for document of style \sty (and optional substyle \substy).
\dot makes a dot over a letter: \dot{a} (math mode).
\doteq is ≅ (math mode).
\dottime expands to fill horizontal space with row of dots.
\doublerulesep — horizontal distance between vertical rules created by \| in \tabular or array environment.
\downarrow is ↓. \Downarrow is ↓ (math mode).
\ell is \ell (math mode).
\em toggles between roman and italic fonts for emphasis.
\emptyset is ∅ (math mode).
\encl{text} declares a list of enclosures for letter document style.
\end{environment} ends an environment begun by \begin{environment} (q.v.).
\epsilon is \epsilon (math mode).
\equiv is ≡ (math mode).
\eta is \eta (math mode).
\evensidemargin — distance between left side of page and text’s normal left margin, for even-numbered pages in two-sided printing.
\exists is \exists (math mode).
\exp is exp (math mode).
\fbox{text} makes a \fbox around text.
\fboxrule — thickness of ruled frame for \fbox and \framebox.
\fboxsep — space between frame and text for \fbox and \framebox.
\fill — rubber length (glue) that can stretch to arbitrary length. Usually used to justify text a particular way.
\flat is b (math mode).
\floatpagefraction — minimum fraction of a float page occupied by floats.
\floatsep — distance between floats that appear at the top or bottom of a text page.
\flushbottom causes pages to be stretched to \textwidth.
\fnsymbol{counter} prints \textup{counter} as one of the set of “footnote symbols”. \textup{counter} must be less than 10.
\footnote{text} creates a footnote of text. \footnotemark puts a footnote number into the text. \footnotesep — height of strut placed at beginning of footnote. \footnotesize switches to footnote-sized type. \footskip — vertical distance between bottom of last line of text and bottom of page footing. \footnotetext{text} specifies the text for a footnote which was indicated by a \footnotemark. \forall is \forall (math mode). \frac{numerator}{denominator} produces a fraction in math environments. \frame{text} makes a framed (outlined) box around text, with no margin between the text and the frame. \framebox[size][pos]{text} produces a framed box of dimension size containing text, optionally positioned l or r. In picture environment, \framebox[width, height][pos]{text} creates a rectangle around text; dimensions of rectangle are width and height; text is positioned at optional pos (see positions on page 8). \hfill is \hfill (math mode). \hyphenation{wordlist} declares hyphenation as indicated; wordlist contains words separated by spaces, with hyphens indicated (e.g. “aard-vark cal-i-bration”). \ie is i.e. \iff is \iff (math mode). \imath is \imath (math mode). \include{filename} brings in filename text at that point. \includeonly{file1, file2, ...} limits recognition of \include files. \index{text} appends text to the .idx file by writing an \indexentry command. \indexentry{text}{ref} is written to the .idx file for \indexentry occurring at reference ref. \indexsep puts blank space before first index entry starting with a new letter. \infty is \infty (math mode). \intertext{vertical space placed above and below float in middle of text.} \iota is \iota (math mode). \it switches to Italic type. \item{text} indicates a list entry. text is optional, used in description environment.
\itemindent — extra indentation before label in list item. Default is 0mm.
\itemsep — vertical space between successive list items.
\j is j.
\jmath is j (math mode).
\Join is \mathbb{N} (math mode).
\kappa is \kappa (math mode).
\ker is \text{ker} (math mode).
\kill — in a \texttt{tabbing} environment, deletes previous line so tabs can be set without outputting text.
\l is l. \texttt{L} is L.
\label{text} provides a reference point that is accessed with \texttt{\ref{text}} or \texttt{\pageref{text}}.
\labelwidth — width of box containing list item label.
\labelsep — space between box containing list item label and text of the item.
\lambda is \lambda. \texttt{\Lambda} is \Lambda (math mode).
\land is \land (math mode).
\langle is \langle (math mode).
\Large, \texttt{\Large} and \texttt{\LARGE} switch to successively larger than \texttt{\normalsize} type sizes.
\LaTeX produces the \LaTeX logo.
\lbrace is \{ (math mode).
\{ is \{ (math mode).
\| is \| (math mode).
\ldots makes three dots at the base of the line: \ldots (cf. \cdots).
\le is \le (math mode).
\leadsto is \leadsto (math mode).
\left* (where * is a delimiter) must be paired with \texttt{\right*} (not necessarily using the same delimiter). \, acts as a null delimiter (math mode).
\leftarrow is \leftarrow. \texttt{\Leftarrow} is \Leftarrow (math mode).
\leftarrow[formula] is used in the \texttt{eqnarray} environment to break a long \texttt{formula} across lines.
\leftharpoondown is \leftharpoondown (math mode).
\leftharpoonup is \leftharpoonup (math mode).
\leftmargin, in \texttt{list} environment, horizontal distance between left margin of enclosing environment and left margin of list. Settable for nesting levels 1 through 6, as \texttt{\leftmargini} through \texttt{\leftmarginvi}.
\leftrightharpoons is \leftrightharpoons (math mode).
\leq is \leq (math mode).
\lfloor is \lfloor (math mode).
\lg is \log (math mode).
\lhd is \lhd (math mode).
\lim is \lim (math mode).
\liminf is \text{lim inf} (math mode).
\limsup is \text{lim sup} (math mode).
\line(x,y){\texttt{len}} in \texttt{picture} environment, in \texttt{\put} command, draws line from \texttt{\put} argument with length \texttt{\len} and slope \texttt{(x,y)}.
\linebreak[n] forces a line to break exactly at this point, and adjusts line just terminated (cf. \texttt{\newline}). \texttt{n} is optional: 0 is an optional break. 4 is a mandatory break. 1, 2 and 3 are intermediate levels of insistence.
\linethickness{\texttt{dimen}} sets the thickness for all lines in a \texttt{picture}.
\linewidth is the width of the current line in a paragraph.
\listoffigures begins a list of figures with heading.
\listoftables begins a list of tables with heading.
\listparindent — extra indentation added to first line of every paragraph of an item after the first, in \texttt{list} environment.
\ll is \ll (math mode).
\ll is \ln (math mode).
\lnot is \lnot (math mode).
\log is \log (math mode).
\longleftarrow is \longleftarrow. \texttt{\Leftrightarrow} is \Leftrightarrow (math mode).
\longlefttarrow is \longlefttarrow. \texttt{\Leftrightarrow} is \Leftrightarrow (math mode).
\longmapsto is \longmapsto (math mode).
\longrightarrow is \longrightarrow. \texttt{\Leftrightarrow} is \Leftrightarrow (math mode).
\lor is \lor (math mode).
\lq is a left-quote: ‘.
\makebox[\texttt{size}]\{\texttt{pos}\}{\texttt{text}} creates a box of dimension \texttt{size} containing \texttt{text} at optional \texttt{pos}. \texttt{\makebox[\texttt{width},\texttt{height}]\{\texttt{pos}\}{\texttt{text}}} puts \texttt{text} in a box; dimensions of box are \texttt{width} and \texttt{height}. \texttt{text} is positioned at optional \texttt{pos} (see \texttt{positions} on page 8).
\makelabelentry enables writing of \texttt{\glossaryentry} commands to a .gix file.
\makeindex enables writing of \indexentry commands to a .idx file.
\maketitle produces a title with \title, \author, and, optionally, \date.
\mapsto is \rightarrow (math mode).
\marginpar{text} puts text in the margin as a note.
\marginparpush — minimum amount of vertical space between two marginal notes.
\marginparskip — horizontal space between margin and marginal note.
\marginparwidth — width of a marginal note.
\markboth{ldh}{rh} defines the left-hand heading ldh and the right-hand heading rh for the headings and \myheadings page styles.
\markright{rh} defines the right-hand heading rh for the headings and \myheadings page styles.
\max is \max (math mode).
\mbox{text} places text into a horizontal box.
\medskip — standard “medium” vertical skip.
\medskipamount — default length for \medskip.
\mho is \Omega (math mode).
\mid is | (math mode).
\min is \min (math mode).
\mit is “math italic” as in II (math mode).
\models is \models (math mode).
\month — current month of the year.
\mp is \mp (math mode).
\mu is \mu (math mode).
\multicolumn{noc}{fmt}{text} in \tabular environment puts text across noc columns using positioning format fmt (c, r, l, and/or |).
\multiput{(x,y)}{(\Delta x, \Delta y)}{\{n\}}{\{obj\}} is
\put{(x,y)}{\{obj\}}
\put{(x+\Delta x, y+\Delta y)}{\{obj\}}
\ldots
\put{(x+(n-1)\Delta x, y+(n-1)\Delta y)}{\{obj\}}.
\nabla is \nabla (math mode).
\natural is \natural (math mode).
\no is \neq (math mode).
\nearrow is \nearrow (math mode).
\neg is \neg (math mode).
\neq is \neq (math mode).
\newcommand{\cs}[narg][def] defines a new control sequence \cs with definition def.
Optionally, narg is the number of arguments, indicated in def as \#1, \#2, etc.
\newcounter{counter}[name] defines a counter optionally to be zeroed whenever the name counter is incremented.
\newenvironment{envname}[narg][def1][def2] defines a new environment, optionally with some number of arguments narg. def1 is executed when the environment in entered and def2 is executed when it is exited.
\newfont{cs}[name] defines a control sequence \cs that chooses the font name.
\newlength{\nl} sets up \nl as a length of 0in. See also \setlength, \addtolength, \settowidth.
\newline breaks a line right where it is, with no stretching of terminated line (cf. \linebreak).
\newpage ends a page where it appears. (cf. \clearpage).
\newsavebox{\biname} declares a new bin to hold a \savebox.
\newtheorem{env}[env2]{label}[sectyp] defines a new theorem environment env (optionally with the same numbering scheme as environment env2) with labels label. Optionally, theorem numbers can be related to document section sectyp.
\ni is \ni (math mode).
\nofiles suppresses writing of auxiliary files .idx, .toc, etc.
\noindent suppresses indentation of first line of paragraph.
\nolinebreak[n] prevents a line break at that point (cf. \linebreak on page 6).
\nonumber is used in an eqnarray environment to suppress equation numbering.
\nopagebreak[n] prevents a page break at that point (cf. \linebreak on page 6).
\normalmarginpar is default declaration for placement of marginal notes (cf. \reversemarginpar).
\normalsize is the default type size for the document.
\not puts a slash through a relational operator: \not= is \neq (math mode).
\notin is \notin (math mode).
\nu is \nu (math mode).
\narrow is \narrow (math mode).
\o is \o. \O is \O.
\obeycr makes embedded carriage returns act like line terminators.
\oddsidemargin — distance between left side of page and text’s normal left margin.
\odot is \odot \ (math mode).
\omega is \omega. \Omega is \Omega \ (math mode).
\ominus is \ominus \ (math mode).
\onecolumn sets text in single column (default) (cf. \twocolumn.
\opening{text} declares an opening for letter document style.
\oplus is \oplus \ (math mode).
\oslash is \oslash \ (math mode).
\otimes is \otimes \ (math mode).
\oval{x,y} as an argument to \put draws an oval x units wide and y units high.
\overbrace{text} gives \overbrace{text} \ (math mode).
\overline{text} gives \overline{text} \ (math mode).
\owns is \owns \ (math mode).
\P \text{ is } \mathbb{P}.
\pagebreak[n] forces a page break at that point (cf. \linebreak on page 6).
\pagenumbering{style} determines page number style: style may be \arabic (3), \roman (iii), \Roman (III), \alph (c), \Alph (C).
\pageref{text} is the page number on which \label{text} occurs.
\pagemargin{sty} determines characteristics of a page’s head and foot. sty may be \plain (page number only), \empty (no page number), \headings (running headings on each page), \myheadings (user headings).
\paragraph{toctitle}{text} begins a new paragraph, automatically headed and numbered. Optional toctitle contains entry for the table of contents if different from text.
\paragraph*{text} begins a paragraph and prints a title, but doesn’t include a number or make a table of contents entry.
\parallel is \parallel \ (math mode).
\parbox{pos}{size}{text} is a box created in paragraph mode. text is positioned optionally at pos (see positions on page 8). Width is size.
\parindent — horizontal indentation added at beginning of paragraph.
\parsep — extra vertical space between paragraphs within a list item.
\parskip — extra vertical space between paragraphs, normally.
\part{toctitle}{text} begins a new part, automatically headed and numbered. Optional toctitle contains entry for the table of contents if different from text.
\part*{text} begins a part and prints a title, but doesn’t include a number or make a table of contents entry.
\partial is \partial \ (math mode).
\partopsep — extra vertical space added before first list item if environment starts a new paragraph.
\perp is \perp \ (math mode).
\phi is \phi. \Phi is \Phi \ (math mode).
\pi is \pi. \Pi is \Pi \ (math mode).
\pm is \pm \ (math mode).
\pmod{modulus} is “parenthesized” modulo expression \( u \mod 2^2 - 1 \) \ (math mode).
\poptabs undoes the previous \poptabs command (restore prior tab settings).
\positions, for boxing commands: \t=top, \b=bottom, \h=here, \l=left, \c=center, \r=right, \p=new page \textbf{(figure environment),} p=parbox \textbf{(tabular environment).}
\pounds is \£.
\Pr is \Pr \ (math mode).
\prec is \prec \ (math mode).
\preceq is \preceq \ (math mode).
\prime is \prime \ (math mode).
\prod is \prod \ (math mode).
\propto is \propto \ (math mode).
\protect permits the use of “dangerous” commands in \( \mathbf{E} \)-expressions, or in sectioning command and \caption arguments.
\ps in \textbf{letter} document style permits additional text after \closing.
\psi is \psi. \Psi is \Psi \ (math mode).
\pushtabs in \textbf{tabbing} environment lets you stack tab stop definitions. Undo with \poptabs.
\put\{x,y\}{stuff} is the basic picture-drawing command. \( x,y \) is the \textit{reference point}, whose meaning varies for different stuff. stuff may be anything that goes in an \textbf{\boxed}.\textbf{raggedbottom} causes pages to assume natural height.
\raggedleft declares all text that follows is to be flush against the right margin (cf. \begin{flushright}).
\sl switches to slanted typeface.
\sloppy relaxes the line-breaking algorithm to allow more or less distance between words.
\small switches to smaller than \normalsize typeface.
\smallint is \int (math mode).
\smallskip — standard “small” vertical skip.
\smallskipamount — default length for \smallskip.
\smile is \simile (math mode).
\spadesuit is \spadesuit (math mode).
\sqcap is \sqcap (math mode).
\sqrt[3]{3}\{arg\} is $\sqrt[3]{3}$ (root) is optional.
\sqsubset is \sqsubset (math mode).
\sqsubseteq is \sqsubseteq (math mode).
\sqsubseteq is \sqsubseteq (math mode).
\ss is \ss.
\stackrel{stuff}{\text{delim}} puts \text{stuff} above the \text{delim}; \stackrel{f}{\text{longrightarrow}} yields $f \rightarrow$ (math mode).
\star is \ast (math mode).
\stop — type this if \LaTeX stops with a * and no error message.
\subparagraph[toctitle]{text} begins a subparagraphs, automatically headed and numbered. Optional \text{toctitle} contains entry for the table of contents if different from \text{text}.
\subparagraph*{text} begins a subparagraph and prints a title, but doesn’t include a number or make a table of contents entry.
\subsection[toctitle]{text}, \subsubsection[toctitle]{text} begin new subsections, automatically headed and numbered. Optional \text{toctitle} contains entry for the table of contents if different from \text{text}.
\subsubsection*[text] begins subsections, but suppress section number and table of contents entry.
\subset is $\subset$ (math mode).
\subseteq is $\subseteq$ (math mode).
\succ is $>$(math mode).
\succeq is $\succeq$ (math mode).
\sum is \sum (math mode).
\sup is \sup (math mode).
\supset is $\supset$ (math mode).
\supseteq is $\supseteq$ (math mode).
\surd is $\sqrt{ }$ (math mode).
\swarrow is $\swarrow$ (math mode).
\symbol{cc} produces the symbol (glyph) character code \text{cc} in the current font.\texttt{t} prints a “tie-after” accent, as ôô.
\tabbingsep — distance to left of a tab stop moved by \texttt{\backslash}.\tabcolsep — half the width of the space between columns in \texttt{tabular} environment.
\tableofcontents produces a table of contents. A .toc file must have been generated during a previous \LaTeX run.
\tan is \tan (math mode).
\tanh is \tanh (math mode).
\tau is \tau (math mode).
\TeX produces the \LaTeX logo.
\textfloatsep — distance between floats at the top or bottom of a single-column page and the text on that page.
\textfraction — minimum fraction of a text page that must contain text.
\textheight is the normal vertical dimension of the body of the page.
\textheight is the normal vertical dimension of the body of the page.
\textstyle switches to \texttt{math} environment typesetting (math mode).
\textwidth is the normal horizontal dimension of the body of the page.
\thanks{\texttt{footnote}} adds an acknowledgement footnote to an author’s name used in a \texttt{\maketitle} command.
\theta is \theta. \Theta is \Theta (math mode).
\thicklines is an alternate line thickness for lines in a \texttt{picture} environment. See also \texttt{linethickness}.
\thinline is the default declaration for line thicknesses in a \texttt{picture} environment. See \texttt{\thicklines}.
\thspace is the proper space between single and double quotes, as in “”.
\thispagestyle{sty} determines characteristics of head and foot for the current page only. Used to override \texttt{\pagestyle (q.v.)} temporarily.
\tilde makes a tilde, as: \texttt{$\tilde{a}$} (math mode).
\texttt{\times} is \times (math mode).
\tiny switches to a very small typeface.
\texttt{\texttt{title\{text\}}} declares a document title for the \texttt{\maketitle} command.
\to is $\rightarrow$ (math mode).
\today generates today's date.
\top is \top (math mode).
\topfraction — maximum fraction at the top of a single-column page that may be occupied by floats.
\topmargin — space between top of \TeX page (1 inch from top of paper) and top of header.
\topsep — extra vertical space added before first list item and after last list item.
\topskip — minimum distance between top of page body to bottom of first line of text.
\triangle is \Delta (math mode).
\triangleleft is \triangle (math mode).
\triangleright is \triangleright (math mode).
\tt switches to typewriter type.
\twocolumn[\text] declares a two-column page, with optional full-page width heading \text.
\typein[\cs]{\text} displays \text on the screen and waits for you to enter stuff which will be put in the document at that point. Optional control sequence \cs can be assigned the value of your input, to be used later.
\typeout{\text} displays \text on the screen and writes it to the .lis file.
\u prints a breve accent, as \ö.
\unboldmath unembolds math italics and math symbols. Should be used outside of math mode.
\underbrace{\text} gives \text (math mode).
\underline{\text} gives \text (math mode or not).
\unitlength — length of coordinate units for \picture environment.
\unlhd is \leq (math mode).
\unrhd is \geq (math mode).
\uparrow is \u. \Uparrow is \u (math mode).
\updownarrow is \u. \Udownarrow is \u (math mode).
\uplus is \u (math mode).
\upsilon is \upsilon. \Upsilon is \upsilon (math mode).
\usebox{\binname} recalls box definition saved in box \binname.
\usecounter{\counter} is used in a list environment to cause \counter to be used to number the items.
\v prints a hácek, as \ö.
\value{\counter} produces the numeric value of \counter.
\varepsilon is \varepsilon (math mode).
\varphi is \varphi (math mode).
\varkappa is \varkappa (math mode).
\varrho is \varrho (math mode).
\varsigma is \varsigma (math mode).
\vartheta is \vartheta (math mode).
\vdash is \vdash (math mode).
\vdot is \vdot (math mode).
\vec puts a vector over a letter: \vec{a} (math mode).
\vector{x,y}{\len} in \picture environment, in \put command, draws vector from \put argument with length \len and slope (x,y), with arrowhead.
\vee is \vee (math mode).
\verb/text/ creates a local \verbatim environment for \text, printed in \typewriter font. Note that \text is not in curly braces; it is between two identical delimiters, neither of which appears in \text.
\verb*/text/ is like \verb/text/, but spaces print out as \w.
\vert is \vert. \Vert is \Vert (math mode).
\vfill is \vspace{\fill} (cf. \fill).
\vspace{\len} leaves a vertical space of dimension \len.
\vspace{\len} is like \vspace{\len} but space is not removed at the beginning or end of a page.
\wedge is \wedge (math mode).
\widehat{\arg} is \widehat{\arg} (math mode).
\widetilde{\arg} is \widetilde{\arg} (math mode).
\wp is \wp (math mode).
\wr is \wr (math mode).
\xi is \xi. \Xi is \Xi (math mode).
\year — current year (A.D.).
\zeta is \zeta (math mode).
**\LaTeX** typefaces

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\rm</td>
<td>Roman</td>
</tr>
<tr>
<td>\it</td>
<td>Italic</td>
</tr>
<tr>
<td>\bf</td>
<td>Boldface</td>
</tr>
<tr>
<td>\sl</td>
<td>Slanted</td>
</tr>
<tr>
<td>\sf</td>
<td>Sans serif</td>
</tr>
<tr>
<td>\sc</td>
<td>SMALL CAPS</td>
</tr>
<tr>
<td>\tt</td>
<td>Typewriter</td>
</tr>
</tbody>
</table>

**Miscellaneous symbols**

<table>
<thead>
<tr>
<th>Command</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>\dag</td>
<td>¥</td>
</tr>
<tr>
<td>\ddag</td>
<td>¶</td>
</tr>
<tr>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>\copyright</td>
<td>©</td>
</tr>
</tbody>
</table>

**Dimensions or lengths**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pt</td>
<td>point (72.27 pt/in)</td>
</tr>
<tr>
<td>pc</td>
<td>pica (12 pt/pc)</td>
</tr>
<tr>
<td>in</td>
<td>inch</td>
</tr>
<tr>
<td>bp</td>
<td>big point (72 bp/in)</td>
</tr>
<tr>
<td>cm</td>
<td>centimeter (2.54 cm/in)</td>
</tr>
<tr>
<td>mm</td>
<td>millimeter (10 mm/cm)</td>
</tr>
<tr>
<td>dd</td>
<td>didot point (1157 dd = 1238 pt)</td>
</tr>
<tr>
<td>cc</td>
<td>cicero (12 dd/cc)</td>
</tr>
<tr>
<td>sp</td>
<td>scaled point (65536 sp/pt)</td>
</tr>
<tr>
<td>em</td>
<td>font-dependent; “quad” width</td>
</tr>
<tr>
<td>ex</td>
<td>font-dependent; “x”-height</td>
</tr>
</tbody>
</table>

**Math-mode accents**

<table>
<thead>
<tr>
<th>Command</th>
<th>Accent</th>
</tr>
</thead>
<tbody>
<tr>
<td>\hat{a}</td>
<td>a hat</td>
</tr>
<tr>
<td>\check{a}</td>
<td>a check</td>
</tr>
<tr>
<td>\tilde{a}</td>
<td>a tilde</td>
</tr>
<tr>
<td>\acute{a}</td>
<td>a acute</td>
</tr>
<tr>
<td>\grave{a}</td>
<td>a grave</td>
</tr>
</tbody>
</table>

**Greek letters (math mode)**

<table>
<thead>
<tr>
<th>Command</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>\alpha</td>
<td>α</td>
</tr>
<tr>
<td>\beta</td>
<td>β</td>
</tr>
<tr>
<td>\gamma</td>
<td>γ</td>
</tr>
<tr>
<td>\delta</td>
<td>δ</td>
</tr>
<tr>
<td>\epsilon</td>
<td>ε</td>
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<tr>
<td>\zeta</td>
<td>ζ</td>
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<tr>
<td>\eta</td>
<td>η</td>
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<tr>
<td>\theta</td>
<td>θ</td>
</tr>
<tr>
<td>\iota</td>
<td>ι</td>
</tr>
<tr>
<td>\kappa</td>
<td>κ</td>
</tr>
<tr>
<td>\lambda</td>
<td>λ</td>
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<tr>
<td>\mu</td>
<td>μ</td>
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<tr>
<td>\nu</td>
<td>ν</td>
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<tr>
<td>\xi</td>
<td>ξ</td>
</tr>
<tr>
<td>\omicron</td>
<td>o</td>
</tr>
<tr>
<td>\pi</td>
<td>π</td>
</tr>
<tr>
<td>\rho</td>
<td>ρ</td>
</tr>
<tr>
<td>\sigma</td>
<td>σ</td>
</tr>
<tr>
<td>\tau</td>
<td>τ</td>
</tr>
<tr>
<td>\upsilon</td>
<td>υ</td>
</tr>
<tr>
<td>\phi</td>
<td>ϕ</td>
</tr>
<tr>
<td>\chi</td>
<td>χ</td>
</tr>
<tr>
<td>\psi</td>
<td>ψ</td>
</tr>
<tr>
<td>\omega</td>
<td>ω</td>
</tr>
</tbody>
</table>

**Text-mode accents**

<table>
<thead>
<tr>
<th>Command</th>
<th>Accent</th>
</tr>
</thead>
<tbody>
<tr>
<td>`o</td>
<td>o</td>
</tr>
<tr>
<td>=o</td>
<td>=o</td>
</tr>
<tr>
<td>`oo</td>
<td>t{o}</td>
</tr>
<tr>
<td>'{o}</td>
<td>o'</td>
</tr>
<tr>
<td>.{o}</td>
<td>o.</td>
</tr>
<tr>
<td>\n{o}</td>
<td>n{o}</td>
</tr>
<tr>
<td>\v{o}</td>
<td>v{o}</td>
</tr>
<tr>
<td>\h{o}</td>
<td>h{o}</td>
</tr>
</tbody>
</table>

**National symbols**

<table>
<thead>
<tr>
<th>Command</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>\oe</td>
<td>œ</td>
</tr>
<tr>
<td>\OE</td>
<td>Æ</td>
</tr>
<tr>
<td>\AA</td>
<td>A</td>
</tr>
<tr>
<td>\L</td>
<td>L</td>
</tr>
<tr>
<td>\AE</td>
<td>Æ</td>
</tr>
<tr>
<td>Ø</td>
<td>Ø</td>
</tr>
</tbody>
</table>
Binary operations (math mode)

\pm \cap \mp \cup \setminus \shuffle \cdot \triangleleft \ast \diamond \circ \bullet \div \lhd \vee \wedge \oplus \ominus \otimes \oslash \pm \mp \cap \cup \setminus \shuffle \cdot \triangleleft \ast \diamond \circ \bullet \div \lhd \vee \wedge \oplus \ominus \otimes \oslash

Variable-sized symbols (math mode)

\sum \prod \coprod \int \oint \bigvee \bigwedge \bigodot \bigotimes \bigoplus \bigcap \bigcup \bigcup

Delimiters (math mode)

\{ \[ \lfloor \lceil \langle \rangle \vert \Vert \uparrow \Uparrow \downarrow \Downarrow \updownarrow \ni \dashv \parallel \perp \bowtie \models \doteq \Join \arccos \csc \ker \min \arcsin \deg \lg \Pr \arctan \det \lim \sec \arg \dim \lminf \sin \acos \exp \lmsup \sinh \cosh \gcd \ln \sup \cot \hom \log \tan \coth \inf \max \tanh
Arrows (math mode)

\leftarrow \quad \text{\longleftarrow}
\leftrightarrow \quad \text{\Longleftarrow}
\rightarrow \quad \text{\longrightarrow}
\Rightarrow \quad \text{\Longrightarrow}
\leftarrowrightarrow \quad \text{\Longleftrightarrow}
\Leftarrow \quad \text{\LongLeftarrow}
\Rightarrowrightarrow \quad \text{\LongRightarrow}
\mapsto \quad \text{\Longmapsto}
\hookleftarrow \quad \text{\hookrightarrow}
\leftharpoonup \quad \text{\rightharpoonup}
\leftharpoondown \quad \text{\rightharpoondown}
\rightleftharpoons \quad \text{\leadsto}
\uparrow \quad \text{\Uparrow}
\downarrow \quad \text{\Downarrow}
\updownarrow \quad \text{\Updownarrow}
\nearrow \quad \text{\nearrow}
\searrow \quad \text{\searrow}
\swarrow \quad \text{\swarrow}
\nwarrow \quad \text{\nwarrow}

Miscellaneous symbols (math mode)

\aleph \quad \prime
\hbar \quad \emptyset
\imath \quad \nabla
\jmath \quad \surd
\ell \quad \top
\wp \quad \bot
\Re \quad \| \quad \|
\Im \quad \angle
\partial \quad \triangle
\infty \quad \backslash
\Box \quad \Diamond
\forall \quad \sharp
\exists \quad \clubsuit
\neg \quad \diamondsuit
\flat \quad \heartsuit
\natural \quad \spadesuit
\mho