

## L<sup>A</sup>T<sub>E</sub>X Command Summary

This listing contains short descriptions of the control sequences that are likely to be handy for users of L<sup>A</sup>T<sub>E</sub>X v2.09 layered on T<sub>E</sub>X v2.0. Some of these commands are L<sup>A</sup>T<sub>E</sub>X macros, while others belong to plain T<sub>E</sub>X; no attempt to differentiate them is made.

- `\_` — ordinary space after period.
- `\!` — negative thin space =  $-\frac{1}{6}$  quad; `xx\!x` yields *xx*x** (math mode).
- `\"` makes an umlaut, as ö.
- `\#` prints a pound sign: #.
- `\$` prints a dollar sign: \$.
- `\%` prints a percent sign: %.
- `\&` prints an ampersand: &.
- `\'` in `tabbing` environment moves current column to the right of the previous column. Elsewhere, acute accent, as ó.
- `\(` — start math mode. Same as `\begin{math}` or `$`.
- `\)` — end math mode. Same as `\end{math}` or `$`.
- `\*` is a discretionary multiplication sign, at which a line break is allowed.
- `\+` moves left margin to the right by one tab stop. Begin tabbed line.
- `\,` — thin space =  $\frac{1}{6}$  quad; `xx\,x` yields *xx x*. It is not restricted to math mode.
- `\-` in `tabbing` environment, moves left margin to the left by one tab stop. Elsewhere, optional hyphenation.
- `\.` puts a dot accent over a letter, as ô.
- `\/` inserts italics adjustment space.
- `\:` — medium space =  $\frac{2}{9}$  quad; `xx\:x` yields *xx x* (math mode).
- `\;` — thick space =  $\frac{5}{18}$  quad; `xx\;x` yields *xx x* (math mode).
- `\<` in `tabbing` environment, puts text to left of local left margin.
- `\=` in `tabbing` environment, sets a tab stop. Elsewhere, makes a macron accent, as ô.
- `\>` in `tabbing` environment is a forward tab. Otherwise, medium space =  $\frac{2}{9}$  quad (math mode).
- `\@` declares the period that follows is to be a sentence-ending period.
- `\[` — same as `\begin{displaymath}` or `$$`.
- `\` terminates a line.
- `\*` terminates a line, but disallows a pagebreak.
- `\]` — same as `\end{displaymath}` or `$$`.
- `\^` makes a circumflex, as ô.
- `\_` is an underscore, as in *hours\_worked*.
- `\‘` in `tabbing` environment moves all text which follows (up to `\)` to the right margin. Elsewhere, grave accent , as ò.
- `\{` prints a curly left brace: {.
- `\|` is || (math mode).
- `\}` prints a curly right brace: }.
- `\~` makes a tilde, as ñ.
- `\a’` makes an acute accent in `tabbing` environment, as ó.
- `\a‘` makes a grave accent in `tabbing` environment, as ò.
- `\a=` makes a macron accent in `tabbing` environment, as ô.
- `\aa` is å. `\AA` is Å.
- `\acute` makes an acute accent: á (math mode).
- `\addcontentsline{toc}{section}{name}` adds the command `\contentsline{section}{name}` to the .toc file.
- `\address{text}` declares the return address in the `letter` document style.
- `\addtocontents{toc}{text}` writes *text* to the .toc file.
- `\addtocounter{name}{amount}` adds *amount* to counter *name*.
- `\addtolength{nl}{length}` adds *length* to length command *nl*. See also `\setlength`, `\newlength`, `\settowidth`.
- `\ae` is æ. `\AE` is Æ.
- `\aleph` is ℵ (math mode).
- `\alph{counter}` prints *counter* as lower-case letters. `\Alph{counter}` prints upper-case letters.
- `\alpha` is α (math mode).
- `\amalg` is II (math mode).
- `\and` separates multiple authors for the `\maketitle` command.
- `\angle` is ∠ (math mode).
- `\appendix` starts appendices.
- `\approx` is ≈ (math mode).
- `\arabic{counter}` prints *counter* as arabic numerals 1, 2, etc.
- `\arccos` is arccos (math mode).
- `\arcsin` is arcsin (math mode).

- `\arctan` is arctan (math mode).
- `\arg` is arg (math mode).
- `\arraycolsep` — width of the space between columns in an `array` environment.
- `\arrayrulewidth` — width of the rule created in `tabular` or `array` environment by `l`, `\hline`, or `\vline`.
- `\arraystretch` — scale factor for interrow spacing in `array` and `tabular` environments.
- `\ast` is  $*$  (math mode).
- `\asymp` is  $\asymp$  (math mode).
- `\author{names}` declares author(s) for the `\maketitle` command.
- `\b` is a “bar-under” accent, as  $\underline{o}$ .
- `\backslash` is  $\backslash$  (math mode).
- `\bar` puts a macron over a letter:  $\bar{a}$  (math mode).
- `\baselineskip` — distance from bottom of one line of a paragraph to bottom of the next line.
- `\baselinestretch` — factor by which `\baselineskip` is multiplied each time a type size changing command is executed.
- `\begin{environment}` — always paired with `\end{environment}`. Following are the assorted environments.
- `\begin{abstract}` starts an environment for producing an abstract.
- `\begin{array}{lrc}` starts array environment with 3 columns, left-justified, right-justified, and centered. Separate columns with `&`, and end lines with `\\`. `@{text}` between `l`, `r` or `c` arguments puts `text` between columns.
- `\begin{center}` starts an environment in which every line is centered. End lines with `\\`.
- `\begin{description}` starts a labeled list. Items are indicated by `\item[label]`.
- `\begin{displaymath}` sets mathematics on lines of its own. Same as `\[` or `$$`.
- `\begin{document}` starts the actual text of a document. Required.
- `\begin{enumerate}` starts a numbered list.
- `\begin{eqnarray}` starts a `displaymath` environment in which more than one equation can be accommodated. Separate equations with `\\` or `\\*`; use `\nonumber` to suppress numbering a particular equation.
- `\begin{eqnarray*}` begins an environment like the `eqnarray` environment except that the equations aren’t numbered.
- `\begin{equation}` starts a `displaymath` environment and adds an equation number.
- `\begin{figure}[pos]` begins a floating environment, which may be optionally placed at `pos` (see `positions` on page 8). Document styles `report` and `article` use the default `tbp`.
- `\begin{figure*}[pos]` begins a two-column-wide figure. See `\begin{figure}`.
- `\begin{flushleft}` starts environment with ragged right-hand margin. Separate lines with `\\`. See `\raggedright`.
- `\begin{flushright}` starts environment with ragged left-hand margin. Separate lines with `\\`. See `\raggedleft`.
- `\begin{itemize}` starts a “bulleted” ( $\bullet$ ) list. Start each item with `\item`.
- `\begin{list}{labeling}{spacing}` starts a general list environment. `labeling` specifies how items are labeled when `\item` has no argument. `spacing` is an optional list of spacing parameters.
- `\begin{math}` starts a math display like this:  $x^2 + y^2$ , within text. Same as `$` or `\(`.
- `\begin{minipage}[pos]{vsize}` starts a box of height `vsize`. Text will be positioned according to `pos` (see `positions` on page 8).
- `\begin{picture}(x,y)(x_l,y_l)` starts a picture environment whose width is  $x$  units, height is  $y$  units, and lower-left corner is the point  $(x_l, y_l)$ . Set units with `\unitlength`.
- `\begin{quotation}` starts an environment with wider margins, normal paragraph indenting, and offset from the text at top and bottom.
- `\begin{quote}` starts an environment with wider margins, no paragraph indenting, and offset from the text at top and bottom.
- `\begin{tabbing}` starts a columnar environment. Use commands `\=` (set tab), `\>` (tab), `\<` (backtab), `\+` (indent one tab stop), `\-` (outdent one tab stop), `\'` (flush right), `\'` (flush left), `\pushtabs`, `\poptabs`, `\kill`, `\\`.
- `\begin{table}[pos]` begins a floating environment, which may be optionally placed at `pos` (see `positions` on page 8). Document styles `report` and `article` use the default `tbp`.
- `\begin{table*}[pos]` begins a two-column-wide table. See `\begin{table}`.
- `\begin{tabular}{arg}` starts an array environment which can be used in or out of math mode. `arg` contains column text positioning commands `r`, `l`, `c`, `@{...}`, `p{length}` (see `positions` on page 8). `|` produces vertical line between columns. `*{7}{r|l|}` repeats that entry 7 times.

- `\begin{theorem}` — see `\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.
- `\beta` is  $\beta$  (math mode).
- `\bf` switches to **bold face** type.
- `\bibitem{ref} text` creates a bibliography entry **text**, numbers it, and labels it with reference label **ref**.
- `\bibliography{file}` — insert bibliography from file **name.bib** at this point in text.
- `\bibliographystyle{style}` — a format specifier, like `\documentstyle`.
- `\bigcap` is  $\cap$  (math mode).
- `\bigcirc` is  $\bigcirc$  (math mode).
- `\bigcup` is  $\bigcup$  (math mode).
- `\bigodot` is  $\odot$  (math mode).
- `\bigoplus` is  $\oplus$  (math mode).
- `\bigotimes` is  $\otimes$  (math mode).
- `\bigtriangledown` is  $\nabla$  (math mode).
- `\bigtriangleup` is  $\triangle$  (math mode).
- `\bigskip` — standard “big” vertical skip.
- `\bigskipamount` — default length for `\bigskip`.
- `\bigsqcup` is  $\sqcup$  (math mode).
- `\biguplus` is  $\uplus$  (math mode).
- `\bigvee` is  $\vee$  (math mode).
- `\bigwedge` is  $\wedge$  (math mode).
- `\bmod` is binary modulo expression  $u \bmod m$  (math mode).
- `\boldmath` changes math italics and math symbols to boldface. Should be used *outside* of math mode.
- `\bot` is  $\perp$  (math mode).
- `\bottomfraction` — maximum fraction of page occupied by floats at the bottom.
- `\bowtie` is  $\bowtie$  (math mode).
- `\Box` is  $\square$  (math mode).
- `\breve` makes a breve accent:  $\breve{a}$  (math mode).
- `\bullet` is  $\bullet$  (math mode).
- `\c` is a cedilla, as  $\c{c}$ .
- `\cal` produces calligraphic letters, as  $\mathcal{B}$  (math mode).
- `\cap` is  $\cap$  (math mode).
- `\caption[loftitle]{text}` creates a numbered caption in a **figure** or **table** environment. Optional **loftitle** contains entry for the list of figures if different from **text**.
- `\cc{text}` declares list of copy recipients for **letter** document style.
- `\cdot` is  $\cdot$  (math mode).
- `\cdots` makes three dots centered on the line:  $\cdots$  (cf. `\ldots`) (math mode).
- `\centering` declares that all text following is to be centered (cf. `\begin{center}`).
- `\chapter[toctitle]{text}` begins a new section, automatically headed and numbered. Optional **toctitle** contains entry for the table of contents if different from **text**.
- `\chapter*{title}` is like `\chapter{title}`, but adds no chapter number or table of contents entry.
- `\check` makes a háček, as  $\check{a}$  (math mode).
- `\chi` is  $\chi$  (math mode).
- `\circ` is  $\circ$  (math mode).
- `\circle{diameter}` as a valid argument for `\put` in a **picture** environment, draws a circle.
- `\circle*{diameter}` is like `\circle`, but draws a solid circle.
- `\cite[subcit]{ref}` produces a reference, in square brackets, to a bibliographic item created with `\bibitem{ref}`. Optional sub-citation **subcit** can be inserted in the entry.
- `\cleardoublepage` forces next page to be a right-hand, odd-numbered page.
- `\clearpage` ends a page where it is, and puts pending figures or tables on separate float pages with no text.
- `\cline{i-j}` draws a horizontal line across columns **i** through **j** inclusive in **array** or **tabular** environments.
- `\closing{text}` declares the closing in **letter** document style.
- `\clubsuit` is  $\clubsuit$  (math mode).
- `\columnsep` — distance between columns in two-column text.
- `\columnseprule` — width of the rule between columns on two-column pages.
- `\columnwidth` — width of the current column. Equals `\textwidth` in single-column text.
- `\cong` is  $\cong$  (math mode).
- `\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  $\cup$  (math mode).
- `\d` is a “dot under” accent, as  $\underset{\cdot}{o}$ .
- `\dag` is †.
- `\dagger` is † (math mode).
- `\dashbox{dwid}{width,height}[pos]{text}`  
creates a dashed rectangle around `text` in a `picture` environment. Dashes are `dwid` units wide; dimensions of rectangle are `width` and `height`; text is positioned at optional `pos` (see positions on page 8).
- `\dashv` is  $\dashv$  (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 ‡.
- `\ddagger` is ‡ (math mode).
- `\ddot` makes a dieresis over a letter:  $\ddot{a}$  (math mode).
- `\ddots` produces a diagonal ellipsis  $\ddots$  (math mode).
- `\deg` is  $\deg$  (math mode).
- `\delta` is  $\delta$ . `\Delta` is  $\Delta$  (math mode).
- `\det` is  $\det$  (math mode).
- `\diamond` is  $\diamond$ . `\Diamond` is  $\Diamond$  (both math mode).
- `\diamondsuit` is  $\diamondsuit$  (math mode).
- `\dim` is  $\dim$  (math mode).
- `\displaystyle` switches to `displaymath` or `equation` environment typesetting (math mode).
- `\div` is  $\div$  (math mode).
- `\documentstyle[substy]{sty}` determines default font, headings, etc., for document of style `sty` (and optional substyle `substy`). Styles: `article`, `book`, `letter`, `report`, `slides`. Substyles: `11pt`, `12pt`, `acm`, `draft`, `fleqn`, `leqno`, `twocolumn`, `twoside`.
- `\dot` makes a dot over a letter:  $\dot{a}$  (math mode).
- `\doteq` is  $\doteq$  (math mode).
- `\dotfill` expands to fill horizontal space with row of dots.
- `\doublerulesep` — horizontal distance between vertical rules created by `||` in `tabular` or `array` environment.
- `\downarrow` is  $\downarrow$ . `\Downarrow` is  $\Downarrow$  (math mode).
- `\ell` is  $\ell$  (math mode).
- `\em` toggles between roman and *italic* fonts for *emphasis*.
- `\emptyset` is  $\emptyset$  (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  $\equiv$  (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 framed box 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  $\flat$  (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 `\textheight`.
- `\fnsymbol{counter}` prints `counter` as one of the set of “footnote symbols”. `counter` must be less than 10.

- `\footheight` — height of box at bottom of page that holds page number.
- `\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).
- `\frown` is  $\frown$  (math mode).
- `\fussy` is the default declaration for the line-breaking algorithm (cf. `\sloppy`).
- `\gamma` is  $\gamma$ . `\Gamma` is  $\Gamma$  (math mode).
- `\gcd` is  $\gcd$  (math mode).
- `\ge` is  $\geq$  (math mode).
- `\geq` is  $\geq$  (math mode).
- `\gets` is  $\leftarrow$  (math mode).
- `\gg` is  $\gg$  (math mode).
- `\glossary{text}` appends `text` to the `.glo` file by writing a `\glossaryentry` command.
- `\glossaryentry{text}{ref}` is written to the `.glo` file for `\glossary{text}` occurring at reference `ref`.
- `\grave` makes a grave accent:  $\grave{a}$  (math mode).
- `\H` prints a long Hungarian umlaut, as  $\ddot{O}$ .
- `\hat` makes a circumflex:  $\hat{a}$  (math mode).
- `\hbar` is  $\hbar$  (math mode).
- `\headheight` — height of box at top of page that holds running head.
- `\headsep` — vertical distance between bottom of head and top of text.
- `\heartsuit` is  $\heartsuit$  (math mode).
- `\hfill` is `\hspace{\fill}` (cf. `\fill`).
- `\hline` draws a horizontal line across all columns of a `tabular` or `array` environment.
- `\hom` is  $\hom$  (math mode).
- `\hookleftarrow` is  $\hookleftarrow$  (math mode).
- `\hookrightarrow` is  $\hookrightarrow$  (math mode).
- `\hrulefill` expands to fill horizontal space with horizontal rule.
- `\hspace{len}` leaves a horizontal space of dimension `len`.
- `\hspace*{len}` is like `\hspace{len}` but space is not removed at the beginning or end of a line.
- `\huge` switches to a very large typeface. `\Huge` is even bigger.
- `\hyphenation{wordlist}` declares hyphenation as indicated; `wordlist` contains words separated by spaces, with hyphens indicated (e.g. “aard-vark cal-i-bra-tion”).
- `\i` is  $i$ .
- `\iff` is  $\iff$  (math mode).
- `\Im` is  $\Im$  (math mode).
- `\imath` is  $\imath$  (math mode).
- `\in` is  $\in$  (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 `\index{text}` occurring at reference `ref`.
- `\indexspace` puts blank space before first index entry starting with a new letter.
- `\inf` is  $\inf$  (math mode).
- `\infty` is  $\infty$  (math mode).
- `\input{file}` brings in text from `file.tex` at that point.
- `\int` is  $\int$  (math mode).
- `\intextsep` — 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  $\Join$  (math mode).
- `\kappa` is  $\kappa$  (math mode).
- `\ker` is  $\ker$  (math mode).
- `\kill` — in a `\tabbing` environment, deletes previous line so tabs can be set without outputting text.
- `\l` is  $l$ . `\L` is  $L$ .
- `\label{text}` provides a reference point that is accessed with `\ref{text}` or `\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  $\lambda$ . `\Lambda` is  $\Lambda$  (math mode).
- `\land` is  $\wedge$  (math mode).
- `\langle` is  $\langle$  (math mode).
- `\large`, `\Large`, and `\LARGE` switch to successively larger than `\normalsize` type sizes.
- `\LaTeX` produces the L<sup>A</sup>T<sub>E</sub>X logo.
- `\lbrace` is  $\{$  (math mode).
- `\lbrack` is  $[$  (math mode).
- `\lceil` is  $\lceil$  (math mode).
- `\ldots` makes three dots at the base of the line: ... (cf. `\cdots`).
- `\le` is  $\leq$  (math mode).
- `\leadsto` is  $\leadsto$  (math mode).
- `\left*` (where  $*$  is a delimiter) must be paired with `\right*` (not necessarily using the same delimiter). ‘.’ acts as a null delimiter (math mode).
- `\leftarrow` is  $\leftarrow$ . `\Leftarrow` is  $\Leftarrow$  (math mode).
- `\lefteqn{formula}` is used in the `eqnarray` environment to break a long `formula` across lines.
- `\leftharpoonup` is  $\leftharpoonup$  (math mode).
- `\leftharpoonup` is  $\leftharpoonup$  (math mode).
- `\leftmargin`, in `list` environment, horizontal distance between left margin of enclosing environment and left margin of list. Settable for nesting levels 1 through 6, as `\leftmargini` through `\leftmarginvi`.
- `\leftrightarrow` is  $\leftrightarrow$ . `\Leftrightarrow` is  $\Leftrightarrow$  (math mode).
- `\leq` is  $\leq$  (math mode).
- `\lfloor` is  $\lfloor$  (math mode).
- `\lg` is  $\lg$  (math mode).
- `\lhd` is  $\lhd$  (math mode).
- `\lim` is  $\lim$  (math mode).
- `\liminf` is  $\liminf$  (math mode).
- `\limsup` is  $\limsup$  (math mode).
- `\line(x,y){len}` in `picture` environment, in `\put` command, draws line from `\put` argument with length `len` and slope  $(x,y)$ .
- `\linebreak[n]` forces a line to break exactly at this point, and adjusts line just terminated (cf. `\newline`). `n` is optional: 0 is an optional break, 4 is a mandatory break, 1, 2 and 3 are intermediate levels of insistence.
- `\linethickness{dimen}` sets the thickness for all lines in a `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 `list` environment.
- `\ll` is  $\ll$  (math mode).
- `\ln` is  $\ln$  (math mode).
- `\lnot` is  $\neg$  (math mode).
- `\log` is  $\log$  (math mode).
- `\longleftarrow` is  $\longleftarrow$ . `\Longleftarrow` is  $\Longleftarrow$  (math mode).
- `\longlefttrightarrow` is  $\longleftrightarrow$ . `\Longlefttrightarrow` is  $\longleftrightarrow$  (math mode).
- `\longmapsto` is  $\longmapsto$  (math mode).
- `\longrightarrow` is  $\longrightarrow$ . `\Longrightarrow` is  $\longrightarrow$  (math mode).
- `\lor` is  $\vee$  (math mode).
- `\lq` is a left-quote: ‘.
- `\makebox[size][pos]{text}` creates a box of dimension `size` containing `text` at optional `pos`. `\makebox(width,height)[pos]{text}` puts `text` in a box; dimensions of box are `width` and `height`; `text` is positioned at optional `pos` (see `positions` on page 8).
- `\makeglossary` enables writing of `\glossaryentry` commands to a `.glo` file.

- `\makeindex` enables writing of `\indexentry` commands to a `.idx` file.
- `\maketitle` produces a title with `\title`, `\author`, and, optionally, `\date`.
- `\mapsto` is  $\mapsto$  (math mode).
- `\marginpar{text}` puts `text` in the margin as a note.
- `\marginparpush` — minimum amount of vertical space between two marginal notes.
- `\marginparsep` — horizontal space between margin and marginal note.
- `\marginparwidth` — width of a marginal note.
- `\markboth{lhs}{rhs}` defines the left-hand heading `lhs` and the right-hand heading `rhs` for the `headings` and `myheadings` page styles.
- `\markright{rhs}` defines the right-hand heading `rhs` 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  $\mathcal{U}$  (math mode).
- `\mid` is  $|$  (math mode).
- `\min` is  $\min$  (math mode).
- `\mit` is “math italic” as in  $\textit{II}$  (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 `l`).
- `\multiput(x,y)(\Delta x,\Delta y){n}{obj}` is  
`\put(x,y){obj}`  
`\put(x+\Delta x,y+\Delta y){obj}`  
`...`  
`\put(x+(n-1)\Delta x,y+(n-1)\Delta y){obj}`.
- `\nabla` is  $\nabla$  (math mode).
- `\natural` is  $\natural$  (math mode).
- `\ne` 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 is 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{binname}` 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).
- `\nwarrow` is  $\nwarrow$  (math mode).
- `\o` is  $\emptyset$ . `\O` is  $\emptyset$ .
- `\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).
- `\oe` is  $\text{œ}$ . `\OE` is  $\text{Œ}$ .
- `\oint` is  $\oint$  (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  $\overbrace{\text{text}}$  (math mode).
- `\overline{text}` gives  $\overline{\text{text}}$  (math mode).
- `\owns` is  $\ni$  (math mode).
- `\P` is  $\P$ .
- `\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.
- `\pagestyle{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  $u \pmod{2^{e_j} - 1}$  (math mode).
- `\poptabs` undoes the previous `\pushtabs` command (restore prior tab settings).
- `positions`, for boxing commands: `t=top`, `b=bottom`, `h=here`, `l=left`, `c=center`, `r=right`, `p=new page` (`figure` environment), `p=parbox` (`tabular` environment).
- `\pounds` is  $\pounds$ .
- `\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  $\text{\@}$ -expressions, or in sectioning command and `\caption` arguments.
- `\ps` in letter document style permits additional text after `\closing`.
- `\psi` is  $\psi$ . `\Psi` is  $\Psi$  (math mode).
- `\pushtabs` in `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 *reference point*, whose meaning varies for different `stuff`. `stuff` may be anything that goes in an `\mbox`.
- `\raggedbottom` causes pages to assume natural height.
- `\raggedleft` declares all text that follows is to be flush against the right margin (cf. `\begin{flushright}`).



`\raggedright` declares all text that follows is to be flush against the left margin (cf. `\begin{flushleft}`).

`\raisebox{dim}[d2][d3]{text}` moves `text` up by `dim` (which may be negative). Optional `d2` makes system think that `text` extends `d2` above the baseline (and optionally `d3` below it).

`\rangle` is  $\rangle$  (math mode).

`\rbrace` is  $\}$  (math mode).

`\rbrack` is  $\}$  (math mode).

`\rceil` is  $\rceil$  (math mode).

`\Re` is  $\Re$  (math mode).

`\ref{text}` is the section number in which `\label{text}` occurs.

`\renewcommand{\cs}[narg]{def}` redefines an existing control sequence `\cs` with definition `def`. Optionally, `narg` is the number of arguments, indicated in `def` as `#1`, `#2`, etc.

`\renewenvironment{envname}[narg]{def1}{def2}` redefines an existing environment. See `\newenvironment`.

`\restorecr` undoes the `\obeycr` command (makes carriage return a space-producing character).

`\reversemarginpar` causes opposite margin to be used for marginal notes (e.g., left margin on odd-numbered pages).

`\rfloor` is  $\rfloor$  (math mode).

`\rhd` is  $\triangleright$  (math mode).

`\rho` is  $\rho$  (math mode).

`\right*` (where `*` is a delimiter) must be paired with `\left*` (not necessarily using the same delimiter). ‘.’ acts as a null delimiter (math mode).

`\rightarrow` is  $\rightarrow$ . `\Rightarrow` is  $\Rightarrow$  (math mode).

`\rightharpoonowdown` is  $\rightarrow$  (math mode).

`\rightharpoonup` is  $\rightarrow$  (math mode).

`\rightleftharpoons` is  $\rightleftharpoons$  (math mode).

`\rightmargin` — in `list` environment, horizontal distance between right margin of enclosing environment and right margin of list. Default 0in.

`\rm` switches to Roman type.

`\roman{counter}` prints `counter` in lower-case roman numerals. `\Roman{counter}` prints upper-case roman numerals.

`\rq` is a right-quote: ‘.

`\rule[height]{length}{width}` makes a rectangular blob of ink `length` long, `width` wide, with optional `height` above baseline.

`\S` is §.

`\savebox{\binname}[width][pos]{text}` is exactly like `\makebox` (q.v.), but saves box definition in bin `\binname`. Access with `\usebox{\binname}`.

`\sbox{\binname}{text}` saves `text` in box `\binname` (see `\savebox`, above).

`\sc` switches to caps and small caps font.

`\scriptsize` switches subscript size type.

`\scriptstyle` switches to sub- or superscript-sized typesetting.

`\scriptscriptstyle` switches to second-level (very small) sub- or superscript-sized typesetting (math mode).

`\searrow` is  $\searrow$  (math mode).

`\sec` is  $\sec$  (math mode).

`\section[toctitle]{text}` begins a new section, automatically headed and numbered. Optional `toctitle` contains entry for the table of contents if different from `text`.

`\section*{text}` begins a section, prints a title, but doesn't include a number or make a table of contents entry.

`\setcounter{counter}{value}` resets the value of `counter`.

`\setlength{\nl}{length}` sets value of length command `\nl` to `length`. See also `\addtolength`, `\newlength`, `\settowidth`.

`\setminus` is  $\setminus$  (math mode).

`\settowidth{\nl}{text}` sets value of length command `\nl` to the width of `text`. See also `\setlength`, `\newlength`, `\addtolength`.

`\sf` switches to sans serif font.

`\sharp` is  $\sharp$  (math mode).

`\shortstack[pos]{x\\yy\\zzz}` yields  $\begin{smallmatrix} x \\ yy \\ zzz \end{smallmatrix}$ , a one-column tabular arrangement of its arguments. Optional `pos` can be `l` or `r` for text position.

`\sigma` is  $\sigma$ . `\Sigma` is  $\Sigma$  (math mode).

`\signature{text}` declares a signature for `letter` document style.

`\sim` is  $\sim$  (math mode).

`\simeq` is  $\simeq$  (math mode).

`\sin` is  $\sin$  (math mode).

`\sinh` is  $\sinh$  (math mode).

- `\sl` switches to *slanted* typeface.
- `\sloppy` relaxes the line-breaking algorithm to allow more or less distance between words. Default is `\fussy`.
- `\small` switches to smaller than `normalsize` typeface.
- `\smallint` is  $\int$  (math mode).
- `\smallskip` — standard “small” vertical skip.
- `\smallskipamount` — default length for `\smallskip`.
- `\smile` is  $\smile$  (math mode).
- `\spadesuit` is  $\spadesuit$  (math mode).
- `\sqcap` is  $\sqcap$  (math mode).
- `\sqcup` is  $\sqcup$  (math mode).
- `\sqrt[3]{arg}` is  $\sqrt[3]{arg}$ . 3 (root) is optional.
- `\sqsubset` is  $\sqsubset$  (math mode).
- `\sqsubseteq` is  $\sqsubseteq$  (math mode).
- `\sqsupset` is  $\sqsupset$  (math mode).
- `\sqsupseteq` is  $\sqsupseteq$  (math mode).
- `\ss` is  $\ss$ .
- `\stackrel{f}{\rel{stuff}{delim}}` puts `stuff` above the delimiter; `\stackrel{f}{\rel{f}{\longrightarrow}}` yields  $\xrightarrow{f}$  (math mode).
- `\star` is  $\star$  (math mode).
- `\stop` — type this if T<sub>E</sub>X stops with a `*` and no error message.
- `\subparagraph[toctitle]{text}` begins a subparagraph, automatically headed and numbered. Optional `toctitle` contains entry for the table of contents if different from `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 `toctitle` contains entry for the table of contents if different from `text`.
- `\subsection*{text}`, `\subsubsection*{text}` begin subsections, but suppress section number and table of contents entry.
- `\subset` is  $\subset$  (math mode).
- `\subseteq` is  $\subseteq$  (math mode).
- `\succ` is  $\succ$  (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  $\surd$  (math mode).
- `\swarrow` is  $\swarrow$  (math mode).
- `\symbol{cc}` produces the symbol (glyph) character code `cc` in the current font.
- `\t` prints a “tie-after” accent, as  $\circ\circ$ .
- `\tabbingsep` — distance to left of a tab stop moved by `\`.
- `\tabcolsep` — half the width of the space between columns in `tabular` environment.
- `\tableofcontents` produces a table of contents. A `.toc` file must have been generated during a previous L<sup>A</sup>T<sub>E</sub>X run.
- `\tan` is  $\tan$  (math mode).
- `\tanh` is  $\tanh$  (math mode).
- `\tau` is  $\tau$  (math mode).
- `\TeX` produces the T<sub>E</sub>X 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.
- `\textstyle` switches to `math` environment typesetting (math mode).
- `\textwidth` is the normal horizontal dimension of the body of the page.
- `\thanks{footnote}` adds an acknowledgement footnote to an author’s name used in a `\maketitle` command.
- `\theta` is  $\theta$ . `\Theta` is  $\Theta$  (math mode).
- `\thicklines` is an alternate line thickness for lines in a `picture` environment. See also `linethickness`.
- `\thinlines` is the default declaration for line thicknesses in a `picture` environment. See `\thicklines`.
- `\thinspace` 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 `\pagestyle` (q.v.) temporarily.
- `\tilde` makes a tilde, as:  $\tilde{a}$  (math mode).
- `\times` is  $\times$  (math mode).
- `\tiny` switches to a very small typeface.
- `\title{text}` declares a document title for the `\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  $\text{\TeX}$  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  $\triangle$  (math mode).
- `\triangleleft` is  $\triangleleft$  (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  $\ddot{o}$ .
- `\unboldmath` unboldens math italics and math symbols. Should be used *outside* of math mode.
- `\underbrace{text}` gives  $\underbrace{\textit{text}}$  (math mode).
- `\underline{text}` gives  $\underline{\textit{text}}$  (math mode or not).
- `\unitlength` — length of coordinate units for `picture` environment.
- `\unlhd` is  $\unlhd$  (math mode).
- `\unrhd` is  $\unrhd$  (math mode).
- `\uparrow` is  $\uparrow$ . `\Uparrow` is  $\Uparrow$  (math mode).
- `\updownarrow` is  $\updownarrow$ . `\Updownarrow` is  $\Updownarrow$  (math mode).
- `\uplus` is  $\uplus$  (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 háček, as  $\v{a}$ .
- `\value{counter}` produces the numeric value of *counter*.
- `\varepsilon` is  $\varepsilon$  (math mode).
- `\varphi` is  $\varphi$  (math mode).
- `\varpi` is  $\varpi$  (math mode).
- `\varrho` is  $\varrho$  (math mode).
- `\varsigma` is  $\varsigma$  (math mode).
- `\vartheta` is  $\vartheta$  (math mode).
- `\vdash` is  $\vdash$  (math mode).
- `\vdots` is  $\vdots$  (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  $\sqcup$ .
- `\vert` is  $|$ . `\Vert` is  $\|$  (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).

**L<sup>A</sup>T<sub>E</sub>X** typefaces

<code>\rm</code>	Roman
<code>\it</code>	<i>Italic</i>
<code>\bf</code>	<b>Boldface</b>
<code>\sl</code>	<i>Slanted</i>
<code>\sf</code>	Sans serif
<code>\sc</code>	SMALL CAPS
<code>\tt</code>	Typewriter

## Miscellaneous symbols

†	<code>\dag</code>	§	<code>\S</code>	©	<code>\copyright</code>
‡	<code>\ddag</code>	¶	<code>\P</code>	£	<code>\pounds</code>

## Dimensions or lengths

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

## Math-mode accents

$\hat{a}$	<code>\hat{a}</code>	$\dot{a}$	<code>\dot{a}</code>
$\check{a}$	<code>\check{a}</code>	$\ddot{a}$	<code>\ddot{a}</code>
$\tilde{a}$	<code>\tilde{a}</code>	$\breve{a}$	<code>\breve{a}</code>
$\acute{a}$	<code>\acute{a}</code>	$\bar{a}$	<code>\bar{a}</code>
$\grave{a}$	<code>\grave{a}</code>	$\vec{a}$	<code>\vec{a}</code>

**L<sup>A</sup>T<sub>E</sub>X** environments

<code>abstract</code>	<code>figure</code>	<code>quote</code>
<code>array</code>	<code>flushleft</code>	<code>tabbing</code>
<code>center</code>	<code>flushright</code>	<code>table</code>
<code>description</code>	<code>itemize</code>	<code>tabular</code>
<code>displaymath</code>	<code>list</code>	<code>theorem</code>
<code>enumerate</code>	<code>math</code>	<code>titlepage</code>
<code>eqnarray</code>	<code>minipage</code>	<code>verbatim</code>
<code>equation</code>	<code>picture</code>	<code>verse</code>
	<code>quotation</code>	

## Greek letters (math mode)

$\alpha$	<code>\alpha</code>	$\nu$	<code>\nu</code>
$\beta$	<code>\beta</code>	$\xi$	<code>\xi</code>
$\gamma$	<code>\gamma</code>	$\omicron$	<code>\o</code>
$\delta$	<code>\delta</code>	$\pi$	<code>\pi</code>
$\epsilon$	<code>\epsilon</code>	$\rho$	<code>\rho</code>
$\zeta$	<code>\zeta</code>	$\sigma$	<code>\sigma</code>
$\eta$	<code>\eta</code>	$\tau$	<code>\tau</code>
$\theta$	<code>\theta</code>	$\upsilon$	<code>\upsilon</code>
$\iota$	<code>\iota</code>	$\phi$	<code>\phi</code>
$\kappa$	<code>\kappa</code>	$\chi$	<code>\chi</code>
$\lambda$	<code>\lambda</code>	$\psi$	<code>\psi</code>
$\mu$	<code>\mu</code>	$\omega$	<code>\omega</code>

## Text-mode accents

$\grave{o}$	<code>\`{o}</code>	$\bar{o}$	<code>\={o}</code>	$\ddot{o}$	<code>\t{oo}</code>
$\acute{o}$	<code>\`{o}</code>	$\dot{o}$	<code>\.{o}</code>	$\circ$	<code>\c{o}</code>
$\hat{o}$	<code>\^{}{o}</code>	$\ddot{o}$	<code>\u{o}</code>	$\oslash$	<code>\d{o}</code>
$\ddot{o}$	<code>\"{}{o}</code>	$\breve{o}$	<code>\v{o}</code>	$\underline{o}$	<code>\b{o}</code>
$\tilde{o}$	<code>\~{}{o}</code>	$\mathring{o}$	<code>\H{o}</code>		

## National symbols

$\text{œ}$	<code>\oe</code>	$\text{å}$	<code>\aa</code>	$\text{ł}$	<code>\l</code>
$\text{Œ}$	<code>\OE</code>	$\text{Å}$	<code>\AA</code>	$\text{Ł}$	<code>\L</code>
$\text{æ}$	<code>\ae</code>	$\text{ø}$	<code>\o</code>	$\text{ß}$	<code>\ss</code>
$\text{Æ}$	<code>\AE</code>	$\text{Ø}$	<code>\O</code>		

$\varepsilon$	<code>\varepsilon</code>	$\varsigma$	<code>\varsigma</code>
$\vartheta$	<code>\vartheta</code>	$\varphi$	<code>\varphi</code>
$\varrho$	<code>\varrho</code>		

$\Gamma$	<code>\Gamma</code>	$\Sigma$	<code>\Sigma</code>
$\Delta$	<code>\Delta</code>	$\Upsilon$	<code>\Upsilon</code>
$\Theta$	<code>\Theta</code>	$\Phi$	<code>\Phi</code>
$\Lambda$	<code>\Lambda</code>	$\Psi$	<code>\Psi</code>
$\Xi$	<code>\Xi</code>	$\Omega$	<code>\Omega</code>
$\Pi$	<code>\Pi</code>		

## Binary operations (math mode)

$\pm$	<code>\pm</code>	$\cap$	<code>\cap</code>
$\mp$	<code>\mp</code>	$\cup$	<code>\cup</code>
$\setminus$	<code>\setminus</code>	$\uplus$	<code>\uplus</code>
$\cdot$	<code>\cdot</code>	$\sqcap$	<code>\sqcap</code>
$\times$	<code>\times</code>	$\sqcup$	<code>\sqcup</code>
$*$	<code>\ast</code>	$\triangleleft$	<code>\triangleleft</code>
$\star$	<code>\star</code>	$\triangleright$	<code>\triangleright</code>
$\diamond$	<code>\diamond</code>	$\wr$	<code>\wr</code>
$\circ$	<code>\circ</code>	$\bigcirc$	<code>\bigcirc</code>
$\bullet$	<code>\bullet</code>	$\bigtriangleup$	<code>\bigtriangleup</code>
$\div$	<code>\div</code>	$\bigtriangledown$	<code>\bigtriangledown</code>
$\lhd$	<code>\lhd</code>	$\rhd$	<code>\rhd</code>
$\vee$	<code>\vee</code>	$\odot$	<code>\odot</code>
$\wedge$	<code>\wedge</code>	$\dagger$	<code>\dagger</code>
$\oplus$	<code>\oplus</code>	$\ddagger$	<code>\ddagger</code>
$\ominus$	<code>\ominus</code>	$\amalg$	<code>\amalg</code>
$\otimes$	<code>\otimes</code>	$\unlhd$	<code>\unlhd</code>
$\oslash$	<code>\oslash</code>	$\unrhd$	<code>\unrhd</code>

## Relations (math mode)

$\leq$	<code>\leq</code>	$\geq$	<code>\geq</code>
$\prec$	<code>\prec</code>	$\succ$	<code>\succ</code>
$\preceq$	<code>\preceq</code>	$\succeq$	<code>\succeq</code>
$\ll$	<code>\ll</code>	$\gg$	<code>\gg</code>
$\subset$	<code>\subset</code>	$\supset$	<code>\supset</code>
$\subseteq$	<code>\subseteq</code>	$\supseteq$	<code>\supseteq</code>
$\sqsubset$	<code>\sqsubset</code>	$\sqsupset$	<code>\sqsupset</code>
$\sqsubseteq$	<code>\sqsubseteq</code>	$\sqsupseteq$	<code>\sqsupseteq</code>
$\in$	<code>\in</code>	$\ni$	<code>\ni</code>
$\vdash$	<code>\vdash</code>	$\dashv$	<code>\dashv</code>
$\smile$	<code>\smile</code>	$\mid$	<code>\mid</code>
$\frown$	<code>\frown</code>	$\parallel$	<code>\parallel</code>
$\neq$	<code>\neq</code>	$\perp$	<code>\perp</code>
$\equiv$	<code>\equiv</code>	$\cong$	<code>\cong</code>
$\sim$	<code>\sim</code>	$\bowtie$	<code>\bowtie</code>
$\simeq$	<code>\simeq</code>	$\propto$	<code>\propto</code>
$\asymp$	<code>\asymp</code>	$\models$	<code>\models</code>
$\approx$	<code>\approx</code>	$\doteq$	<code>\doteq</code>
		$\Join$	<code>\Join</code>

## Variable-sized symbols (math mode)

$\Sigma$	<code>\sum</code>	$\bigcap$	<code>\bigcap</code>
$\prod$	<code>\prod</code>	$\bigcup$	<code>\bigcup</code>
$\coprod$	<code>\coprod</code>	$\bigsqcup$	<code>\bigsqcup</code>
$\int$	<code>\int</code>	$\bigvee$	<code>\bigvee</code>
$\oint$	<code>\oint</code>	$\bigwedge$	<code>\bigwedge</code>
$\bigodot$	<code>\bigodot</code>	$\bigotimes$	<code>\bigotimes</code>
$\bigoplus$	<code>\bigoplus</code>	$\biguplus$	<code>\biguplus</code>

## Delimiters (math mode)

$($	<code>\lfloor</code>	$)$	<code>\rfloor</code>
$[$	<code>\lceil</code>	$]$	<code>\rceil</code>
$\{$	<code>\langle</code>	$\}$	<code>\rangle</code>
$\lfloor$	<code>\backslash</code>	$\rfloor$	<code>\backslash</code>
$\lceil$	<code>\Vert</code>	$\rceil$	<code>\Vert</code>
$\langle$	<code>\uparrow</code>	$\rangle$	<code>\Uparrow</code>
$\backslash$	<code>\downarrow</code>	$\backslash$	<code>\Downarrow</code>
$\uparrow$	<code>\updownarrow</code>	$\Uparrow$	<code>\Updownarrow</code>
$\downarrow$		$\Downarrow$	
$\updownarrow$		$\Updownarrow$	

## “Log-like” functions (math mode)

<code>\arccos</code>	<code>\csc</code>	<code>\ker</code>	<code>\min</code>
<code>\arcsin</code>	<code>\deg</code>	<code>\lg</code>	<code>\Pr</code>
<code>\arctan</code>	<code>\det</code>	<code>\lim</code>	<code>\sec</code>
<code>\arg</code>	<code>\dim</code>	<code>\liminf</code>	<code>\sin</code>
<code>\cos</code>	<code>\exp</code>	<code>\limsup</code>	<code>\sinh</code>
<code>\cosh</code>	<code>\gcd</code>	<code>\ln</code>	<code>\sup</code>
<code>\cot</code>	<code>\hom</code>	<code>\log</code>	<code>\tan</code>
<code>\coth</code>	<code>\inf</code>	<code>\max</code>	<code>\tanh</code>

## Arrows (math mode)

$\leftarrow$	<code>\leftarrow</code>	$\longleftarrow$	<code>\longleftarrow</code>
$\Lleftarrow$	<code>\Lleftarrow</code>	$\Longleftarrow$	<code>\Longleftarrow</code>
$\rightarrow$	<code>\rightarrow</code>	$\longrightarrow$	<code>\longrightarrow</code>
$\Rightarrow$	<code>\Rightarrow</code>	$\Longrightarrow$	<code>\Longrightarrow</code>
$\leftrightarrow$	<code>\leftrightarrow</code>	$\longleftrightarrow$	<code>\longleftrightarrow</code>
$\Leftrightarrow$	<code>\Leftrightarrow</code>	$\Longleftrightarrow$	<code>\Longleftrightarrow</code>
$\mapsto$	<code>\mapsto</code>	$\longmapsto$	<code>\longmapsto</code>
$\hookrightarrow$	<code>\hookrightarrow</code>	$\hookrightarrow$	<code>\hookrightarrow</code>
$\leftharpoonup$	<code>\leftharpoonup</code>	$\rightharpoonup$	<code>\rightharpoonup</code>
$\leftharpoondown$	<code>\leftharpoondown</code>	$\rightharpoondown$	<code>\rightharpoondown</code>
$\rightleftharpoons$	<code>\rightleftharpoons</code>	$\leadsto$	<code>\leadsto</code>
$\Uparrow$	<code>\Uparrow</code>	$\Updownarrow$	<code>\Updownarrow</code>
$\uparrow$	<code>\uparrow</code>	$\nearrow$	<code>\nearrow</code>
$\downarrow$	<code>\downarrow</code>	$\searrow$	<code>\searrow</code>
$\Downarrow$	<code>\Downarrow</code>	$\swarrow$	<code>\swarrow</code>
$\updownarrow$	<code>\updownarrow</code>	$\nwarrow$	<code>\nwarrow</code>

## Miscellaneous symbols (math mode)

$\aleph$	<code>\aleph</code>	$\prime$	<code>\prime</code>
$\hbar$	<code>\hbar</code>	$\emptyset$	<code>\emptyset</code>
$\imath$	<code>\imath</code>	$\nabla$	<code>\nabla</code>
$\jmath$	<code>\jmath</code>	$\surd$	<code>\surd</code>
$\ell$	<code>\ell</code>	$\top$	<code>\top</code>
$\wp$	<code>\wp</code>	$\bot$	<code>\bot</code>
$\Re$	<code>\Re</code>	$\parallel$	<code>\parallel</code>
$\Im$	<code>\Im</code>	$\angle$	<code>\angle</code>
$\partial$	<code>\partial</code>	$\triangle$	<code>\triangle</code>
$\infty$	<code>\infty</code>	$\backslash$	<code>\backslash</code>
$\Box$	<code>\Box</code>	$\diamond$	<code>\Diamond</code>
$\forall$	<code>\forall</code>	$\sharp$	<code>\sharp</code>
$\exists$	<code>\exists</code>	$\clubsuit$	<code>\clubsuit</code>
$\neg$	<code>\neg</code>	$\diamondsuit$	<code>\diamondsuit</code>
$\flat$	<code>\flat</code>	$\heartsuit$	<code>\heartsuit</code>
$\natural$	<code>\natural</code>	$\spadesuit$	<code>\spadesuit</code>
$\mho$	<code>\mho</code>		