

# L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> Setting Commands

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## Useful Links

- [Link](#) Latex Not to short: Very useful L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> manual
- [Link](#) L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> discussion group
- [Link](#) L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> Wiki book
- [Link](#) Length setting
- [Link](#) Fancy page style

## New Commands, Environments and Packages

- `\newcommand{name}[num]{definition}`
- `\newenvironment{name}[num]{before}{after}` The environment before and after the parameter.
- `\ProvidesPackage{package name}`: It is the first line in making your own package with .sty extension. The rest of the file consist of commands used in preamble.
- `\usepackage{ifthen}`  
`\ifthenelse{equal{\blackandwhite}{true}}{`  
`% "black and white" mode; do something..`  
`}{`  
`% "color" mode; do something different..`  
`} Usage of the command \blackandwhite is:`  
`\newcommand{\blackandwhite}{false}\input{test.tex}`  
`make a text color`  
It is the same as `\newcommand` but with if then else structure.
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## Line Spacing

- `\linespread{factor}`

- `\linespread{1.6}`: double space between lines
- `\setlength{\baselineskip}{1.5\baselineskip}`

## Paragraph Formatting

- `\setlength{\parindent}{0pt}`
- `\setlength{\parskip}{1ex plus 0.5ex minus 0.2ex}`
- `\indent`
- `\noindent`

## List Separation

- `\setlength\topsep{0pt}`
- `\setlength\itemsep{0pt}`
- `\setlength\parskip{0pt}`
- `\usepackage{enumitem}` it changes the space in enumerate  
`\begin{enumerate}[topsep=0pt, partopsep=0pt] \item...`
- `\begin{list}{-}{\setlength\topsep{0pt}\setlength\itemsep{10pt}\setlength\parskip{-3pt}}`  
`\item...`

## Horizontal Space

- `\hspace{length}, \hspace*{length}`: leave out given horizontal space
- `\hspace{1.5cm}`
- `\stretch{n}`
- `\hspace{\stretch{1}}`
- `\hfill, hrulefill, \dotfill`: fill out all available horizontal space with a line or with dots

## Vertical Space

- `\vspace{length}`, `\vspace*{length}`: leave out given vertical space
- `\addvspace{length}`: extend the vertical space until it reaches length.
- `\smallskip`: leave out certain spaces
- `\medskip`: leave out certain spaces
- `\bigskip`: leave out certain spaces
- `\vfill`: stretch vertical space so that it fills all empty space

## Page Layout

- `\addtolength{parameter}{length}`
- `\addtolength{\hoffset}{-0.5cm}`
- `\addtolength{\textwidth}{1cm}`
- `\setlength{parameter}{length}`
- `\setlength{\textheight}{20cm}%{8.875in}`
- `\setlength{\textwidth}{15cm}%{6.875in}`
- `\setlength{\parindent}{1pc}`
- `\setlength{\parskip}{.2cm}`
- `\setlength{\columnsep}{0.3125in}`
- `\setlength{\topmargin}{22pt}`
- `\setlength{\headheight}{12pt}`
- `\setlength{\headsep}{19pt}`
- `\setlength{\voffset}{0pt}`
- `\setlength{\hoffset}{0pt}`
- `\setlength{\footskip}{27pt}`
- `\setlength{\oddsidemargin}{22pt}%{- .1875in}`
- `\setlength{\evensidemargin}{22pt}%{- .1875in}`
- `\setlength{\marginparsep}{7pt}`
- `\setlength{\marginparwidth}{106pt}`

- `\setlength{\marginparpush}{5pt}`
- `\setlength{\paperheight}{845pt}`
- `\setlength{\paperwidth}{597pt}`
- `\setlength{\pdfpagewidth}{8.5in}`
- `\setlength{\pdfpageheight}{11in}`
- `\settowidth`
- `\settoheight`
- `\settodepth`
- `\newlength`: It defines a new length command

## Boxes

- `\makebox[width] [pos]{text}, \mbox{text}`: enclose text into a box and then print, can be used math mode.
- `\framebox[1cm] [l]{text}`: enclose text into a framed box and then print.
- `\raisebox{lift}[extend-above-baseline][extend-below-baseline]{text}`: raise or lower (if dist is negative) the box created from text.
- `\parbox[pos]{width}{text}`: insert several paragraphs into a box of given width
- `\begin{minipage}[pos]{width} text \end{minipage}`
- `\newsavebox{boxname}?`: define the holder boxname to store a box.
- `\savebox{boxname}{text}, \sbox{boxname}{text}`: save text into the holder boxname
- `\usebox{boxname}`: use material stored in box holder boxname

## Rules and Struts:

- `\rule[lift]{width}{height}`: This command makes a simple block box which is filled with black color. It is useful for making lines.

## Fonts and Sizes

### Fonts

- `\textrm{}`roman
- `\texttt{}`typewriter
- `\textmd{}`medium
- `\textup{}`upright
- `\textsl{}`slanted
- `\emph{}`emphasized
- `\textsf{}`sans serif
- `\textbf{}`bold face
- `\textit{}`italic
- `textsc`SMALL CAPITAL
- `textnormal`document font

### Math Fonts

- `\mathrm{}`roman font
- `\mathbf{}`boldface font
- `\mathsf{}`sans serif font
- `\mathit{}`italic font
- `\mathcal{}`calligraphic font
- `\mathnormal{}`normal font

### Font Sizes

- `\tiny`
- `\scriptsize`
- `\footnotesize`
- `\small`
- `\normalsize`
- `\large`

- `\Large`
- `\LARGE`
- `\huge`
- `\Huge`
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## Numbering

- `\thepage` insert page number
- `\thechapter` insert chapter number
- `\thesection` insert section number
- `\addtocounter{counter}{value}` counters (look at the [link](#)) such as chapter
- `\renewcommand \thechapter {3}` start chapter numbering from 3
- `\addtocounter{chapter}{2}` start chapter numbering from 3

## Miscellaneous

- `\par`
- `\ignorespaces`
- `\ignorespacesafterend`
- `\parindent` - normal paragraph indentation
- `\baselineskip` - normal vertical distance between lines in a paragraph
- `\baselinestretch` - multiplies
- `\baselineskip`
- `\parskip` - the extra vertical space between paragraphs
- `\textwidth` - the width of text on the page
- `\linewidth` - width of a line in the local environment
- `\textheight` - the height of text on the page
- `\unitlength` - units of length in Picture Environment
- `\bfseries`

- `\leftmargin`
- `\parsep`
- `\ttfamily`
- `\makeat..?`
- `\makeatletter`
- `\hbox`
- `\fi`
- `\clearpage`
- `\cleardoublepage`
- `\if@twoside`
- `\if@twocolumn`
- `\ifodd`
- `\c@page`
- `\thispagestyle{empty}`
- `\hyphenatic`