

LaTeX Cheat Sheet

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> Comments

Insert a comment with %
% this text is ignored

> Environments

Environments are sections in a document that apply special behavior rules to the enclosed text.
`\begin{environment-name}`
% environment contents
`\end{environment-name}`

> Equations

Description	Code	Output
Insert inline equation with \$	The equation is <code>\$e=mc^2\$</code>	The equation is $e=mc^2$
Insert inline equation with \	The equation is <code>\(e=mc^2\)</code>	The equation is $e=mc^2$
Insert unnumbered equation with \$\$	The equation is <code>\$\$e=mc^2\$\$</code>	The equation is $e=mc^2$
Insert unnumbered equation with \[The equation is <code>\[e=mc^2\]</code>	The equation is $e=mc^2$
Insert numbered equation with \begin{equation}	<code>\begin{equation}e=mc^2\end{equation}</code>	$e=mc^2 (1)$

> Document structure

Preamble

Preamble content must appear before `\begin{document}`.
Define the document class with `\documentclass`.
`\documentclass[options]{class}`

Common class values

Class	Description
article	Default class for composing an article.
report	Typeset a multi-chapter report.
book	A class for typesetting books.
beamer	For producing presentations and slides.

Common class options

Option	Default value	Available values
fontsize	11pt	20pt, 12.5pt, etc
paper	a4, portrait	a3, letter, landscape
toc	nolistof	listof, listofnumbered
captions	tablebelow, figurebelow	tableabove, figureabove
twocolumn	false	true

Loading Packages

Load a package with `\usepackage`
`\usepackage[options]{package}`

Common package examples

Functionality	Code
Mathematical typesetting	<code>\usepackage{amsmath}</code>
Set the text encoding	<code>\usepackage[utf8]{inputenc}</code>
Multilingual support	<code>\usepackage[english, spanish, portuguese]{babel}</code>

Document

Include the entire document in a document environment.
`\begin{document}`
% The complete document contents
`\end{document}`

Title Page

Element	Output
Title of document	<code>\title{text}</code>
Author name	<code>\author{text}</code>
Date	<code>\date{\today}</code>
Generate the title page	<code>\maketitle</code>

Content Listings

Element	Output
Table of contents	<code>\tableofcontents</code>
List of tables	<code>\listoftables</code>
List of figures	<code>\listoffigures</code>

Headings

Element	Code
Chapter	<code>\chapter{The Last Chapter}</code>
Section	<code>\section{Conclusion}</code>
Subsection	<code>\subsection{Final thoughts}</code>

Text Justification

Description	Code	Output
Left align	<code>\begin{flushleft}</code>	On the left
Center align	<code>\begin{center}</code>	In the middle
Right align	<code>\begin{flushright}</code>	On the right

Lists

Description	Code	Output
Bulleted list	<code>\begin{itemize}\item flour\item milk\item eggs\end{itemize}</code>	<ul style="list-style-type: none"> flour milk eggs
Numbered list	<code>\begin{enumerate}\item Learn LaTeX\item ???\item Profit\end{enumerate}</code>	<ol style="list-style-type: none"> Learn LaTeX ??? Profit
Named elements in list	<code>\begin{description}\item[datum] Single piece of information\item[data] Plural of datum\end{description}</code>	datum Single piece of information data Plural of datum

> Text Mode

Formatting

Description	Code	Output
Bold	<code>\textbf{To boldly go}</code>	To boldly go
Italic	<code>\textit{Leaning Tower of Pisa}</code>	<i>Leaning Tower of Pisa</i>
Small caps	<code>\textsc{anidae}</code>	CANIDAE

Spaces

Description	Code	Output
Thinnest space	<code>very\,close</code>	<i>very close</i>
Thin space	<code>quite\:close</code>	<i>quite close</i>
Medium space	<code>fairly\;close</code>	<i>fairly close</i>
1 em space	<code>quite\quadfar</code>	<i>quite far</i>
2 em space	<code>very\quadquadfar</code>	<i>very far</i>

Accents

Description	Code	Output
Hat	<code>\hat{a}</code>	\hat{a}
Bar	<code>\bar{a}</code>	\bar{a}
Tilde	<code>\tilde{a}</code>	\tilde{a}

> MathMode

Mathematical Arithmetic Operators

Description	Code	Output
Plus	<code>2 + 3</code>	$2 + 3$
Minus	<code>9 - 6</code>	$9 - 6$
Plus or Minus	<code>\pm 1.53</code>	± 1.53
Multiplication (times)	<code>6 \times 7</code>	6×7
Multiplication (dot)	<code>6 \dot{=} 7</code>	$6 \cdot 7$
Division (slash)	<code>7 / 22</code>	$7 / 22$
Division (symbol)	<code>7 \div 22</code>	$7 \div 22$

Numeric Comparison Operators

Description	Code	Output
Equal	<code>1 + 2 = 3</code>	$1+2=3$
Not equal	<code>1 + 2 \neq 4</code>	$1+2 \neq 4$
Approximately equal	<code>\pi \approx 3.14</code>	$\pi \approx 3.14$
Less than	<code>6 < 7</code>	$6 < 7$
Less than or equal to	<code>6 \leq 7</code>	$6 \leq 7$
Greater than	<code>8 > 7</code>	$8 > 7$
Greater than or equal to	<code>8 \geq 7</code>	$8 \geq 7$

Equations

Description	Code	Output
Fraction	<code>\frac{7}{22}</code>	$\frac{7}{22}$
Square root	<code>\sqrt{49}</code>	$\sqrt{49}$
Nth root	<code>\sqrt[5]{243}</code>	$\sqrt[5]{243}$
Subscript	<code>x_{i}</code>	x_i
Superscript	<code>x^{3}</code>	x^3
Absolute values	<code> x </code>	$ x $
Natural logarithm	<code>\ln(5)</code>	$\ln(5)$
Logarithm	<code>\log_{2}8</code>	$\log_2 8$
Exponential	<code>\exp(x)</code>	e^x
Sine, cosecant	<code>\sin(x)=\frac{1}{\csc(x)}</code>	$\sin(x) = \frac{1}{\csc(x)}$
Cosine, secant	<code>\cos(x)=\frac{1}{\sec(x)}</code>	$\cos(x) = \frac{1}{\sec(x)}$
Tangent, cotangent	<code>\tan(x)=\frac{1}{\cot(x)}</code>	$\tan(x) = \frac{1}{\cot(x)}$

Greek and Hebrew Letters

Description	Code	Output
Lowercase delta	<code>\delta</code>	δ
Uppercase delta	<code>\Delta</code>	Δ
Aleph	<code>\Aleph</code>	\aleph

Set Theory

Description	Code	Output
Union	<code>\cup</code>	\cup
Intersection	<code>\cap</code>	\cap
Is a member of	<code>\in</code>	\in
Empty set	<code>\emptyset</code>	\emptyset

Logic Operators

Description	Code	Output
Not	<code>\neg A</code>	$\neg A$
And	<code>A \land B</code>	$A \wedge B$
Or	<code>A \lor B</code>	$A \vee B$



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