General

First paragraph.
Second paragraph.

```
First paragraph.

Second paragraph.
```

manual new
line

```
manual new \\ line
```

page break

```
\clearpage
```

Let φ be a formula.

```
Let $\varphi$ be a formula.
```

This text is important.

```
\emph{This text is important.}
```

special characters like & or $

```
special characters like \& or \$
```

space after LaTeX and similar commands

```
space after \LaTeX\ and similar commands
```

- a
- b

```
\begin{itemize}
  \item a
  \item b
\end{itemize}
```

1. a
2. b

```
\begin{enumerate}
  \item a
  \item b
\end{enumerate}
```

$$|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{otherwise} \end{cases} \tag{1}$$

```
\begin{equation}
  \lvert x \rvert = \begin{cases}
    x & \text{if } x \geq 0 \\
    -x & \text{otherwise}
  \end{cases}
\end{equation}
```


```
\includegraphics[scale=0.5]{logo.png}
```

text	text
text	text

```
\begin{tabular}{r|l}
   text & text \\
   \hline
   text & text
\end{tabular}
```

Commands in Math Mode

$\alpha, \beta, \gamma, \delta, \varepsilon$	`\alpha, \beta, \gamma, \delta, \varepsilon`
φ, χ, ψ	`\varphi, \chi, \psi`
Σ, Γ	`\Sigma, \Gamma`
$x_1, \ldots, x_n$	`x_1, \dots, x_n`
x^{2y}	`x^{2y}`
$\leadsto$	`\leadsto`
$\leftarrow$	`\leftarrow`
$\Rightarrow$	`\Rightarrow`
$x \stackrel{(*)}{=} y$	`x \stackrel{(*)}{=} y`
kursiv	`\textit{kursiv}`
`code`	`\texttt{code}`
Symbol	`\textup{Symbol}`
$x < y, x \leq y, x \geq y$	`x < y, x \leq y, x \geq y`
$x \mod 3$	`x \mod 3`
$2 \cdot x$	`2 \cdot x`

Chapter A

$A = \{a, b, c\}$	`A = \{a,b,c\}`
$x \in A$	`x \in A`
$y \notin A$	`y \notin A`
$A \cup B$	`A \cup B`
$A \cap B$	`A \cap B`
$A \setminus B$	`A \setminus B`
$A \subset B$	`A \subset B`
$A \subseteq B$	`A \subseteq B`
$A \not\subseteq B$	`A \not\subseteq B`
$B \supseteq A$	`B \supseteq A`
$A \neq B$	`A \neq B`

Chapter B

$\{1, 2, 3, \dots\}$	`\{1, 2, 3, \dots\}`
$\emptyset$	`\emptyset`
$\{x^2 \mid 0 \leq x \leq 5\}$	`\{x^2 \mid 0 \leq x \leq 5\}`
$x \in A, x \notin A$	`x \in A, x \notin A`
$\mathbb{N}, \mathbb{N}_0, \mathbb{Z}, \mathbb{Q}, \mathbb{R}$	`\mathbb N, \mathbb N_0, \mathbb Z, \mathbb Q, \mathbb R`
$A = B, A \subset B, A \not\supseteq B$	`A = B, A \subset B, A \not\supseteq B`
$\mathcal{P}(A)$	`\mathcal P(A)`
$A \cap B, A \cup B, A \setminus B, \overline{A}$	`A \cap B, A \cup B, A \setminus B, \overline{A}`
$\lvert A \rvert$	`\lvert A \rvert`
$0 \leftrightarrow 1$	`0 \leftrightarrow 1`
$\bigcup_{S \in M} S$	`\bigcup_{S \in M} S`
$\langle 0, 0 \rangle$	`\langle 0, 0 \rangle`
$S_1 \times S_2$	`S_1 \times S_2`
R^*	`R^*`
$R_1 \circ R_2$	`R_1 \circ R_2`
$f : A \to B$	`f : A \rightarrow B`
$f : A \nrightarrow B$	`f : A \nrightarrow B`
$f\lvert_X$	`f\lvert_X`

$\begin{pmatrix} 1 & 2 & 3 & 4 & 5 \\ 4 & 1 & 3 & 5 & 2 \end{pmatrix}$	`\begin{pmatrix}`
	`  1 & 2 & 3 & 4 & 5 \\`
	`  4 & 1 & 3 & 5 & 2`
	`\end{pmatrix}`

$\frac{x}{y}$	`\frac{x}{y}`
$x \equiv y \pmod{z}$	`x \equiv y \pmod{z}`
$\binom{x}{y}$	`{x \choose y}`

Chapter D

$\Sigma_{n=0}^{\infty} L(n) x^n$	`\Sigma_{n=0}^\infty L(n)x^n`
$\log_B(A)$	`\log_B(A)`
$O(g)$	`O(g)`
$\Omega(g)$	`\Omega(g)`
$\Theta(g)$	`\Theta(g)`

Chapter E

$\neg A$	`\lnot A`
$(A \vee B)$	`(A \lor B)`
$(A \wedge B)$	`(A \land B)`
$(A \rightarrow B)$	`(A \rightarrow B)`
$(A \leftrightarrow B)$	`(A \leftrightarrow B)`
$\mathcal{I} \models \varphi$	`\mathcal I \models \varphi`
$\mathcal{I} \not\models \psi$	`\mathcal I \not\models \psi`
Δ	`\Delta`
$\forall x$	`\forall x`
$\exists x$	`\exists x`