

# Latex Knowledgebase

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## 1 Examples

### 1.1 fun math commands

Result	Code
$a = b \quad b = c \quad d = e$	<code>a = b \quad b = c \quad d = e</code>
$\vec{x}, \hat{x}, \tilde{x}, \stackrel{!}{=}$	<code>\Vecx, \hat{x}, \tilde{x}, \stackrel{!}{=}</code>
$\alpha, \beta, \dots, \varphi, \partial$	<code>\alpha, \beta, \dots, \varphi, \partial</code>
$\dots, \cdots, \vdots$	<code>\dots, \cdots, \vdots</code>
$\sum_a^b \int_a^b$	<code>\sum_a^b \int_a^b</code>
$\wedge, \vee, \cup, \cap, \leq, \geq, \subset, \supset, \subseteq, \supseteq$	<code>\wedge, \vee, \cup, \cap, \leq, \geq, \subset, \supset, \subseteq, \supseteq</code>
$\in, \forall, \mapsto, \infty, \nabla, \times$	<code>\in, \forall, \mapsto, \infty, \nabla, \times</code>
$\dagger$	<code>\dag</code>
$y(x) = \begin{cases} 1 & \text{für } x > 1 \\ 0 & \text{für } x \leq 1 \end{cases}$	<code>y(x) = \left\{ \begin{aligned} &amp; 1 \quad \text{für } x &gt; 1 \\ &amp; 0 \quad \text{für } x \leq 1 \end{aligned} \right.</code>
$\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$	<code>\left( \begin{array}{rrr} 1 &amp; 0 &amp; 0 \\ 0 &amp; 1 &amp; 0 \\ 0 &amp; 0 &amp; 1 \end{array} \right)</code>
$\begin{pmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \end{pmatrix}$	<code>\begin{pmatrix} a_1 &amp; b_1 &amp; c_1 \\ a_2 &amp; b_2 &amp; c_2 \end{pmatrix}</code>

Tabelle 1: fun math commands

$\sim$ .. umbruchgeschütztes Leerzeichen  
 $\backslash$  ... Leerzeichen,  $\backslash$ text{...}... Text, $\backslash$ bm{...}... fett, $\backslash$ {... { ,in MathMode  
 $\backslash$ input{...} ... copys the text of a .tex file.  
 $\backslash$  \\\Leerzeile  
 $\{(x + y)\}$  hoch 2 ist schöner als  $(x + y)$  hoch 2

## 1.2 Textumbruch und Aufzählungen

Text Text Text Text Text Text Text Text Text Text Text Text Text Text Text Text Text  
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1. Punkt 1
2. Punkt 2

- Punkt 1
- Punkt 2
- a) Punkt 3
- b) Punkt 4

**Punkt 1** Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text,

**Punkt 2** Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text,

## 1.3 urls, Hyperlinks, Verweise und Quellen

Verweis ??, oder ??  
 Quellenangabe [**citation-example**] (biblatex: style=numeric)  
 Fußnote <sup>1</sup>  
 Quellenangabe in der Fußzeile (footcite):<sup>2</sup>  
 Quellenangabe in der Fußzeile (footfullcite):<sup>3</sup>  
 Url <https://www.overleaf.com/project/633d30db4fb2f816895ee1f8>  
 Hyperlink Google  
 Ordner (funktioniert nur in Adobe.)

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<sup>1</sup>Footnote 1

<sup>2</sup>**citation-example.**

<sup>3</sup>**citation-example.**

### 1.4 Example Equation

$$y[n] = x[Mn] \quad (1)$$

$$\begin{aligned} a &= b \\ &= c \\ &= d \end{aligned}$$

### 1.5 Tabularray example

C1	C2
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Tabelle 2: TestTable

1	2	3
1	2	

## 1.6 Example Figure



Abbildung 1: TestFigure

## 1.7 Example wrap figure

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Abbildung 2: JKU Logo

## 1.8 Minipages

`\begin{minipage}[position][height][inner-pos]{width}`

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## 2 Special tables

tabularray dokumentation

Line 1	2 Columns		2 Rows 2 Columns	
Line 2	2-2	2-3		
3-1	3-2	3-3	3-4	3-5

Alpha	Beta	Gamma	Delta
Epsilon	Zeta	Eta	Theta
Iota	Kappa	Lambda	Mu
Nu	Xi	Omicron	Pi
Rho	Sigma	Tau	Upsilon
Alpha	Beta	Gamma	Delta
Epsilon	Zeta	Eta	Theta
Iota	Kappa	Lambda	Mu
One	Two	Three	
Four	Five	Six	
Seven	Eight	Nine	
Top Baseline Left Left	Middle Center	Right Right Bottom Baseline	

### 3 more Math stuff

#### 3.1 \begin {matrix}

Matrix centers all values. With a character in front of matrix you can specify if there are brackets:

- p... for parentheses
- b... for brackets
- v... for verts
- B... for braces
- V... for double verts.

Example:

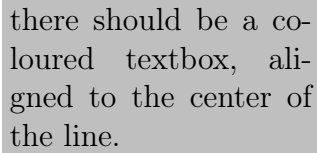
$$\begin{pmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \end{pmatrix}$$

Code:

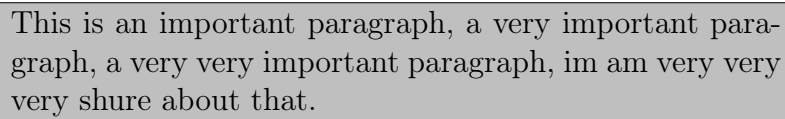
```
\begin{pmatrix}
& & \
& & \
\end{pmatrix}
```

## 4 Xcolour

xcolor documentation: <https://www.namsu.de/Extra/pakete/Xcolor.html>

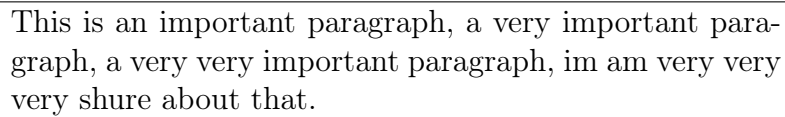
there is a coloured box: 

There is an important paragraph:



This is an important paragraph, a very important paragraph, a very very important paragraph, im am very very very shure about that.

Only framed is possible with fbox (`\usepackage{fbox}`):



This is an important paragraph, a very important paragraph, a very very important paragraph, im am very very very shure about that.

or with `\fcolorbox{black}{lightgray}`

Tabellenverzeichnis

Abbildungsverzeichnis